

Publications Committee

BULLETIN
OF
THE UNIVERSITY OF TEXAS

NO. 273

ISSUED FOUR TIMES A MONTH

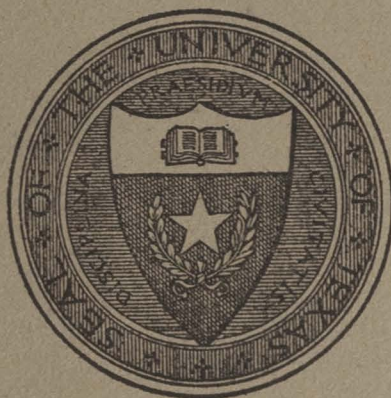
HUMANISTIC SERIES No. 15

April 1,
MARCH 15, 1913

A Social Survey of Austin

BY

WILLIAM B. HAMILTON



PUBLISHED BY
THE UNIVERSITY OF TEXAS
AUSTIN, TEXAS

Entered as second-class matter at the postoffice at Austin, Texas

240-613-1m-3573

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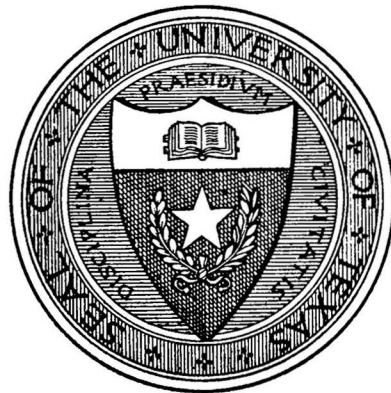
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**Cultivated mind is the guardian genius
of democracy. . . . It is the only
dictator that freemen acknowledge and
the only security that freemen desire.**

President Mirabeau B. Lamar.

**The benefits of education and of useful
knowledge, generally diffused through a
community, are essential to the preser-
vation of a free government.**

President Sam Houston.

INTRODUCTORY NOTE.

The City of Austin, as every citizen well knows, has been richly endowed by nature. We have the beautiful hills to the west, which have come down to meet the fertile plains of the Gulf, to rest the eye, and the trees are abundant. The natural health conditions are unsurpassed. The State Capitol, the State Institutions for the Blind, Deaf, and Insane, and the State University, along with a number of private schools, add to the general attractiveness of the city. Yet we have permitted certain social ills to spring up with the growth of our city. We are still in the Dark Ages of sanitary and health regulations.

The present City Administration has adopted a forward program of municipal improvements, and Austin has taken new life. A number of miles of paving has been constructed, the water system, lighting system, and parking system have been greatly improved. The sewer system has been doubled; laws are better enforced; and the city is now constructing a dam across the Colorado River, which is to cost \$1,500,000. Along with these material improvements, it is fitting that the city should take an invoice of the sanitary and health conditions. It seems certain that an administration such as this, needs only to be informed as to the deplorable conditions as they now exist in order that effective remedies will be adopted.

The purpose of this survey is to reveal certain deep-seated social ailments in this community, to state as accurately as possible the actual sanitary and health conditions under which we live, and arouse the public mind to see the great need of eradicating these bad conditions. The inadequacy of present organization of the health department and present ordinances for effecting proper sanitary and health conditions has been pointed out. And a policy of next-steps in municipal housekeeping has been suggested.

The method employed in making this survey is similar to that used by the Department of Surveys and Exhibits of the Russell Sage Foundation. I wish to acknowledge the very valuable aid given me by Mr. Shelby M. Harrison, Director of that Department. This report was primarily intended as a thesis for the

Introductory Note

Master of Arts Degree, and the conditions herein described have been personally observed. I wish to thank Professor Herman G. James, under whose direction this survey was made, and also Dr. Henry W. Harper for their valuable suggestions and criticisms. I am most grateful to the Mayor, to each member of the City Council, and to the City Health Officer and Inspectors for their full co-operation in my efforts to obtain an exact account of the conditions as they now are. The financial aid given by the City Council is most highly appreciated.

W. B. HAMILTON,

Fellow in the School of Government of The University of Texas,
and Special Health Inspector for the City of Austin.

Austin, Texas, June, 1913.

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A SOCIAL SURVEY OF AUSTIN

SANITARY AND HEALTH CONDITIONS

PART I.

CHAPTER I.

WATER SUPPLY.

SOURCE OF MUNICIPAL WATER SUPPLY.

The source of the municipal water supply of Austin is the Colorado River, and there seems to be no probability of this source becoming unavailable. There are two filter trenches along the river front at the end of Rio Grande Street and a smaller one about a quarter of a mile up the river. Water is pumped from these trenches alternatively, or, if the demand for water is very great, from all at the same time. The water stands in these trenches from a depth of three feet to eight feet, according to the height of the water in the river. Deep wells have not been tried,

There seems to be at the present time little possibility of pollution of the water supply at the source.* The water is filtered through a natural bed of sand. The formations encountered in the construction of the large filter trench are shown in the diagram on page I of the appendix.

This is practically an intermittent filter. The water must enter the trenches from the bottom, thereby making it practically impossible for pollution from surface water. A large pipe carries the

*Before the low dam, which is being advocated in the papers, is constructed a careful investigation should be made of its effect on these filter trenches. It is the belief of certain prominent chemists of Austin that the amount of silt which would settle on the bed of the river would necessitate the abandonment of these filter trenches. There may be some possibility of the water becoming polluted at the source because of the improper disposition of the compost and other waste by Mexicans who are camped near the dam. Compost is thrown in great heaps in the ravines and over the bank of the river itself. With each shower a large part of this is washed into the river. It is a false presumption to say that this water will purify itself before it reaches the filter trenches, about three miles below the dam.

water from the trenches to the well, from which it is pumped directly into the mains. There is now being constructed a large concrete, surface reservoir about two miles beyond the north boundary of the city. The location is ideal in every respect save its closeness to the public highway. However this objection will be of little weight if the road is kept well oiled and trees are planted along the highway.

A recent bacteriological test made by the State Bacteriologist, Dr. Hartman, of water which was taken from the mains at various places within the city showed that the municipal water supply of Austin is free from any harmful bacteria.

SURFACE WELLS.

But not always did Austin have this excellent source of pure water. For a long time it was dependent on private wells and cisterns; during which time a large number of wells were dug and cisterns constructed. These have since come to be a source of much disturbance. A majority of these wells and cisterns have been abandoned, but a number yet remain in use. In the suburbs, Hyde Park and South Austin, numerous wells have been dug in recent years. It is estimated by city authorities, and others who are intimate with such matters, that there are no less than five hundred private wells now in use in this city. Neither the Water nor Health Departments has a map showing the location of these wells. The city could spend no money more judiciously than for such a chart.

These wells are the source of much sickness and should be carefully investigated by the health authorities. During the summer of 1912 a terrible typhoid epidemic broke out in South Austin. There were numerous cases in Hyde Park. This epidemic became so serious the physicians sought for the source, which was found to be the polluted surface wells. It was impossible to get the disease under control until over fifty wells in South Austin were sealed. The records of the health officers do not show the exact number closed. I counted twelve wells in Hyde Park which are within ten feet of very dirty horse lots. The wells are shallow and it is certain the water seeps into them from these horse lots. While there is no chart kept by the city health officers showing diseased sections of the city, I am told by a number of prominent

physicians there is continual sickness in this section where private wells are used.

South Austin and Hyde Park are not the only sections where private wells are in common use. There are a number in East Austin and at the older settled places of the city. I counted seven wells on the banks of the large open sewer of East Austin, commonly called Waller Creek. The numerous wells in this section are further polluted by the water which seeps from the State Cemetery. I was told by the City Engineer that the soil in this section was of such a nature that he was absolutely certain that there was no well in this section free from this source of pollution. As the sewer system does not reach this part of the city, there are numerous cess pools, poorly constructed and nothing more than a very foul source of soil pollution. I found three wells which had to be abandoned because cess pools had been dug too near the wells. One of these wells was deep, well cased, and the owner had erected a windmill over it.

PRIVY VAULTS.

Privy vaults are used to a very large extent in Austin. As the sewer system accommodates but a relatively small section of the city, a large number of the people are forced to resort to this practice. In Hyde Park, it is estimated by a prominent citizen of that section, 35 per cent of the houses are connected with cess pools.

The dry closets line the back alleys, and there is no way to keep the human waste from being scattered over the ground and alleys. While driving through the alleys of these sections, I counted three closets which did not seem to have been cleaned in several months. The people had, in places, actually raked the compost into the alley. Screening the dry closets is very uncommon.

The cess pools also are improperly constructed. They are merely shallow wells, about six feet deep in the average, the walls and bottoms bare, the tops covered over with boards and dirt. In places, these have partially caved in, and mosquitoes can be seen flying from them any time of the day. These are most dangerous sources of soil pollution. Is it a wonder the hookworm disease is

so prevalent, when the very ground on which our barefoot children play is thus teeming with filth?

If flies were all that would result from outside closets and cess pools, it would not be so consequential. The typhoid fly is not all. The contamination of the water supply is bad enough, but what is worse, this results in the pollution of the soil itself. Do away with the surface pollution of the soil, and we will do away with the hookworm. Clean up the animal refuse from the premises, and we will save the soil and water from pollution, and do away with flies.

The city has no ordinance regulating the distance of vaults from wells or cisterns. One of the first things which should concern the city should be the adoption of such an ordinance. Although much of its effectiveness would be lost because of the poorly organized health department.*

OPEN CISTERNS.

As in the case of private wells and privy vaults, it is impossible to tell the number of cisterns in the city without a house to house canvass. While this was beyond the domain of this survey, yet we may get a fair idea as to the number and condition of cisterns from the city inspectors and other officials. The Commissioner of Receipts, Disbursements and Accounts, under whose department is placed, under our poor arrangement, the sanitary inspection of the city, lately recommended to the Council that all cisterns be filled up. In commenting on his recommendation, he said: "There are over five hundred open, uncovered, unused cisterns in Austin. These are half full of water, cans, boards, and all kinds of rubbish. They are nothing but breeding places for millions of mosquitoes."

*See Reorganization of Health Department, page 76.

CHAPTER II.

SEWAGE DISPOSAL.

SEWER SYSTEM.

The sewer system of Austin, until recently, was owned by a private company. On the fourteenth of January of this year, the people took over this company's mains, paying \$100,000 for them, and the Commission has let the contract for twenty miles of mains, so as to extend the service. The mains of the Austin Sewer Company accommodate less than one-half of the people of Austin, and the territory covered is about one-fourth of the well populated sections of the city. This is bounded on the north by Twenty-seventh Street, on the west by West Avenue, except a small section, on the east by East Avenue. The completion of the mains now under contract will provide a sewer system for Hyde Park and most of East Austin. Contracts will be let in the near future for the construction of the proposed mains which will accommodate South Austin.

It was impossible to obtain the exact per cent. of the people who, living within the sewer district, do not take advantage of it. The Austin Sewer Company has no chart showing the houses connected with the sewer, neither has the City Health Department, nor the City Council such a map. It was estimated by the officers of the Austin Sewer Company that less than 75 per cent of the houses in reach of the sewer were connected with it. The city had no power to compel the people to patronize this private institution, but since the people now own the system, every house, business or residence can and should be forced to be connected with the sanitary sewer. The entire section of the city, reached by the sewer system, should be platted, showing all connections and needed extensions. A copy of this chart should be kept by the City Board of Health to be used in tracing down the causes of epidemics and the effects of certain health precautions.

The outfall of the city sewer at present is at the south end of Trinity Street. This is only three blocks down the river from the Avenue bridge. The City Council, recognizing the great danger arising from the discharge of the sewage into the river within

the very heart of the city, have planned to change the outlet to a point fully one mile further down the river. This will be done by intercepting the old mains at the corner of First and Trinity Streets by the mains now under construction. The proposed mains for South Austin will cross the river and be joined to the old mains at First and Colorado Streets.

The Federal Government runs a sewer from the postoffice to the river, the outlet of which is under the Avenue bridge. This is injurious to the health of the people of this city and should be remedied. A large shoal of fish feed on this sewage. Negroes and Mexicans can be seen fishing here any time of the day. This is put on the Austin market. Such practice should be forbidden by a rigidly enforced ordinance.

Great danger arises from the very unsanitary condition at the outfall of the State sewer at the foot of East Avenue. This sewer accommodates the Capitol, Insane Asylum, Land Office Building, the University, and the School for the Blind. Also a large number of private houses are connected with this sewer. The outfall is not within the current of the river, but the sewage is discharged on the sandy beach and allowed to openly drain into the river. Gases, with very foul odors, arise from this sewer, and on a damp day the air is very obnoxious to the people for many blocks around. The city is spending a great amount of money in parking this avenue in an effort to help that somewhat neglected part of the city. It is not right for the State to maintain this nuisance, which to some extent counteracts the efforts of the city.

It will be seen that the present sewer system of Austin is entirely inadequate, though a great improvement will result from the completion of the mains proposed and now under contract. These changes, however, will by no means be sufficient, as there will yet remain an important work with reference to the remedying of sanitary conditions of Waller Creek, Little Shoal Creek, and Shoal Creek.

Waller Creek is an open sewer from Nineteenth Street to the river. This creek enters the thickly settled part of the city at Nineteenth and San Jacinto Streets; it crosses to Neches Street on Eighteenth; to Sabine on Eleventh Street; on First Street it goes back to Neches and then to the river. On both sides of this creek are jammed together small shacks, some of which sit on

stilts out over the banks of the creek.* A personal inspection of this creek from Nineteenth Street to where it empties into the river gave the following figures by actual count: Private drains emptying into the creek, twenty-three; wells within twenty-five feet of the banks, seven; number of open closets, from which compost drops directly into the creek, or where the closet sits within six feet of the creek bank, one hundred and twenty-two; residences within twenty feet or less, one hundred and six. At 705 East Sixth Street people live in houses which are built on stilts out over the banks of the creek. They are forced to breathe the foul air which the south wind drives up the walled sides of this filthy sewer. Fruit is offered for sale to the public at this place. At Ninth Street a small creek flows into Waller, forming a V-shaped bluff on which is located one of the ward schools of the city. The air which these children breathe is laden with the filth and foul odors from this creek.

The open storm sewer, commonly called Little Shoal Creek, which runs through the most fashionable residence section of the city, assumes a very dangerous condition on Nineteenth and San Antonio Streets. From Nineteenth Street to Sixteenth, it separates the front doors of residences for three blocks from the street which they face. On Sixteenth Street it crosses over to Nueces, then to Rio Grande on Eighth Street.

The level of the Y. M. C. A. swimming pool is far below the sanitary sewer in that section. The City Council has given the Y. M. C. A. authorities permission to drain the pool into this open storm sewer. There are numerous little hollows along the creek, where the water stands and soon becomes stagnant. The leakage from horse lots and privy vaults seeps into this sewer.

Little Shoal Creek should be made into a closed storm sewer. It is a natural drain. The grade is already made, and the proper depth is there. The only work required would be to build up the sides and cover it. This would accommodate a very large section of the city, and it is estimated by city authorities that the cost would not exceed \$12,000.

Shoal Creek in no way differs from Waller Creek, except in the fact that the latter is an open sewer for nineteen blocks, while the former is such for only eight blocks. There are, by count, fifteen

*See pages 8 and 9 of the appendix.

open closets which sit on the banks of this creek; three wells and five private drains. Farther up the creek, the conditions are practically as bad, except that they arise from other sources. A number of horse lots and hog pens, within the city limits, drain into this creek. The city dump, with all its filth, is on West Twenty-fifth Street in a ravine which empties into Shoal Creek, not over one hundred yards away. This ravine carries off the storm water from Wheatville and also from a number of blocks just northwest of the University campus. This water seeps through the manure, and the decaying matter in this dump, then into the creek, by which it is carried through the very best residence portion of the city to the river. This creek is lined, through almost its entire distance, with trash, rubbish, cans, stable refuse, straw, and other filth.

Between Thirty-fifth and Thirty-seventh streets, on Guadalupe Street, is another open sewer which separates the residences from the street in front. This partakes of the nature of a pond in which water stands a large part of the year. This stagnant pool could be drained with very little expenditure; the grade of the culvert underneath Guadalupe would have to be lowered very little to carry off this water. This is a natural drain from the Insane Asylum park and lake, and should be properly cared for by the city. A concrete storm sewer for these two blocks would cost very little and would be of great value to the health of the people who live in that community.

SEWAGE DISPOSAL.

The sewage is discharged in its raw state into the river, and undergoes no "treatment" of any sort, thereby polluting the stream and making the water very dangerous to the health of a large number of citizens who live along the river front. The Thirty-third Legislature, by enacting the anti-pollution stream bill, which takes effect within three years, forces the city to erect a sewage disposal plant. Extensions in the sewer system of the city must be made with this in view.

CHAPTER III.

GARBAGE AND WASTE.

The disposal of garbage and waste is the "livest public health problem of American municipalities." The special relation it bears to fly-borne diseases and soil pollution makes it of extreme importance to every individual in the community. Austin is in the Dark Ages of civic sanitation. In no one thing is the city farther behind than in the disposal of garbage and waste.

MANNER OF HANDLING OF GARBAGE AND WASTE AT HOME.

The City of Austin does not require any special cans or retainers for the collection of either garbage or waste at the home. The waste from the kitchen, such as pieces of bread, meats, and slop, are, as a rule, thrown into open buckets or kegs. These are unscreened and never washed. When the garbage is removed the slop bucket is left out where the flies can, with the least possible effort, find food for themselves and a place to deposit their eggs where they are certain to have sufficient food during the primary stages of their short life. The garbage can is the most fruitful source of typhoid and infantile paralysis. The progressive cities of America have learned that retainers for garbage must have close fitting covers and they must be washed and oiled daily.

The city ordinance, Title 29, Chapter 5, Article 675, requires each person in possession of any business or residence premise to deposit "all ordinary trash and sweepings from such premises in movable receptacles placed in the alley adjacent to such premises * * * convenient to be taken off by the scavenger carts at such time as may be directed by the Sanitary Inspector."

"The movable receptacles" to be found at the residences and business houses are tubs, boxes, and barrels. They are unscreened. The bottoms and sides are open and the sweepings and other trash are scattered all over the sidewalk and alley. I was able to find but a very few closed receptacles in Austin, not one on Congress Avenue, while there were barrels and boxes of papers and trash of all kinds to be seen. The picture on page 4 of the appendix shows the average trash box used by the business houses of this

city. This box was placed just across the street from the postoffice. In it were to be found paper, sweepings, cigar stubs, and lemon rinds, and the cuspidors of this corner saloon had been emptied into it. The picture following shows the retainers at another store exactly as they were found. I did not move a barrel. These barrels were full of papers, trash, sweepings, and the waste from the soda fountain. From three to five hundred University students pass these daily.

The Sanitary Inspector of the city tells me there are very few instances where garbage and trash are destroyed at home. In those few cases where it is, the method used is burning or burying.

Persons are supposed to separate refuse into garbage, ashes, and trash. The city proposes to take up the trash only. Ashes and garbage must be removed by private agencies. As a matter of fact this separation is not made; an investigation of the contents of these boxes will conclusively prove this to be true. Where the house is connected with the sewer or cess pool, the slops are poured through the sinks. Pieces of bone, bread, and the like are thrown into the trash box. Mexican men, women, and children daily come to these trash containers and pick out the scraps of food. Again and again I have seen them eat it on the very spot. The men generally carry tow sacks into which part of the garbage is carried home for the children to eat. It is the common thing to see the garbage thrown over the back fence into the alley. At one particular place on the east side of the University campus the people have thrown so much garbage into the alley, next to the wall around Clark Field that the odor makes it very disagreeable for spectators in the grandstand. This is no singular instance, but represents a large class of cases. There is hardly a person in this city who does not know that the alleys of Austin are filled with watermelon rinds during the summer months. The Sanitary Inspector says that it requires five extra wagons during this season.

METHOD OF COLLECTION OF GARBAGE AND WASTE.

Garbage, strictly speaking, is collected by private agencies. There are a number of slop wagons that collect the garbage from residences, restaurants, and hotels. This is mostly done by negroes who feed the waste to hogs. As a general rule, this service is free to the householders, yet it is sometimes difficult to find a negro

who will collect the garbage. At some of the larger restaurants and hotels, persons pay for the privilege of hauling away the garbage. Here it is collected every day, but on an average it is taken up only once or twice a week, if taken up from private homes at all.

No specially constructed garbage wagons are required. While the cans and barrels are covered with tow sacks, yet the wagon beds are covered with garbage.

Article 697, Title 29, of the city ordinances, sets out the regulations concerning the collection of garbage by private wagons in the following language:

"It shall be unlawful for any person to move slops and swills in carts, wagons or other vehicles in the City of Austin between the hours of 6 o'clock a. m. and 8 o'clock p. m.; provided, that this ordinance shall not apply to persons hauling such slops in odorless tanks in any time of the day."

The city wagons take up trash from the residences in most cases twice each week. However, there are some sections which are not reached more often than once a week. In the business sections the wagons make the rounds every day.

The city undertakes to collect nothing but trash and sweepings, while as a matter of fact, the wagons carry to the dumps not less than 60 per cent of the garbage collected in this city. They are practically forced to do this. People place meat, breads, and other refuse from the kitchen in the boxes and barrels along with the paper and trash. Rags, ashes, and manure are also thrown into these boxes, all this being dumped into the city's carts. It is very common practice for grocery stores to place rotten cabbage, decayed potatoes, over-ripe bananas, old boxes of cakes, and other spoiled foodstuffs in the trash containers. The drivers of the wagons are forced to take up all of this together, for they cannot take the time to separate the garbage from the trash.

The trash wagons are piled so high with this character of waste that from the alley to the dumping ground the streets are strewn with this character of filth. The photograph on page 6 of the appendix shows a city dump cart overloaded with stable manure on its way to the city dump, and with each jolt of the wagon much manure fell off in the streets, thereby forming new places for the mother fly to deposit her eggs. Again, this method of handling

the refuse is dangerous from another standpoint,—the dumps become the source of many ills.

DISPOSAL OF GARBAGE AND WASTE.

As before mentioned, garbage hauled off by private wagons is fed to hogs. In open violation to a city ordinance, there are several places within the city limits where hogs are fed.

There are two large city dumps, besides many smaller fills in certain streets and on private property. The larger of these dumps is located along the river front from Colorado Street to Rio Grande Street. The other is on West Twenty-fifth Street. The effect of these dumps on the housing conditions of the surrounding blocks is discussed on page 16

The nature of the refuse taken to these dumps by the city wagons has already been described. This already intolerable condition of the dumps is rendered worse by the great amount of manure dumped by private wagons. Here we find cans, many of which are filled with stagnant water; bottles, broken ware, papers, rags, ashes, manure in large amounts, potatoes, boxes of old cakes, spoiled canned goods, refuse from saloons and soda fountains, and waste from the kitchen. There is no city ordinance against the removal of rags, boxes, cans and the like from these dumps, nor is there any provision for policing dumps. Just as the chickens follow the farmer's plow to pick up the fresh earth worms, so do the Mexicans, negroes, and poor whites follow the city wagons to the dumps to pick out rags, boxes, and decayed food. I found one family of six persons living near the dump on Twenty-fifth Street who, according to their neighbors, subsist on the food they collect from this dump. On January 1, I saw three women and seven children, all white, leave the dump on Twenty-fifth Street with their arms full of rags, garbage and rubbish. On January 12, I took the pictures shown on page 7 of the appendix. Here there were five women, two men, and seven children, picking up trash, decayed food, and rags. The men had filled two tow sacks with this rubbish. The women and children left with their arms full of filthy waste.

An ordinance should be passed at once making it a misdemeanor for any person to remove anything from these dumps. This prac-

tice has undoubtedly caused much disease among a class which is very hard to reach.

At the foot of Rio Grande Street there is a small municipal crematory. But this will not incinerate garbage or other waste if it is at all damp. Only papers and rags, which are dry, can be destroyed here; a very small per cent of that collected by the dump carts, not to mention the rubbish and manure hauled to the dumps by private wagons.

These dumps are necessary unless the city installs a larger crematory. At present all dead animals are buried by the city along the banks of the river in the southeastern part of the city, near the old show grounds. The incineration plant recommended by Commissioner Haynes will absolutely remove the necessity for the pollution of the soil by the burial of dead animals; nor will dumps be necessary. This plant will incinerate garbage alone, and the oils which will be secured from this process will sell for a high price as fertilizers. At the same time all kinds of trash and rubbish can be destroyed in this crematory. We can never hope to stamp out typhoid successfully and other fly-borne diseases unless the city collects the garbage and special closed retainers are required at the homes.

If we keep our premises clean, our stables clean, the alleys clean, our streets clean, then, and not till then will we get rid of flies.

The city has made two large fills in the streets with waste, one at the foot of Lavaca Street and the other at the foot of Brazos. Numerous fills have been made by the city on private lots. At present the city wagons are dumping in eight different places, all of which are surrounded by residences. The only requirements necessary to induce the city wagon to dump on a private lot is to open a way of entrance. If the people within the vicinity register objections, the wagons are stopped. However, it is not even necessary to secure the permission of the Sanitary Inspector to get this filling done. Often drivers of dump wagons alone are consulted. The same character of rubbish which is carried to the dumps is used in making these fills. Often the wagons do not dump longer than two weeks in one place, but how can the health authorities cope with the disease resulting from such a practice? The owners

of the property are not even required to cover up the refuse and manure with good soil.

ALLEYS.

The picturesque disorder and the sordid squalor of the average alley in Austin should put to shame every loyal citizen of our beautiful city. A great amount of decaying matter is allowed to accumulate in the alleys and back yards. Here one sees a large amount of manure scattered over the alley and lot, uncollected trash and garbage, surface water, slops, washtub emptyings, un-screened and uncleaned privies, leakage from privies and stables.

Ashes are not collected by the city except where they are put in trash boxes. Generally speaking, they are piled in a corner in the back yard, close to the alley, until the heap grows so large that the householder is finally compelled to have them hauled away.

The city has made no regulations regarding the handling of manure. The Sanitary Inspector is supposed to inspect the premises occasionally and, if he finds them in a very bad condition, the householder is required to have them cleaned. All manure should be taken up daily and placed in screened boxes. These boxes ought to be emptied at least twice a week. The mother fly lays her eggs in this manure and, during the warm weather, it requires only four days for it to hatch. If the manure is taken up and destroyed during that time, the fly is also destroyed. A large part of the manure in some of the alleys is left to rot. Much of that which is removed is hauled to the dumps to become a new breeding place for millions of flies. A few of the wagons haul manure out to gardens and fields to be used as fertilizers.

The wagons used in hauling manure really add to the fly menace. The beds are full of cracks and permit much to fall through to the streets. Also it is the practice to pile manure so high on the wagons that it is scattered from the premises to the dump. These wagons should have tight beds and the manure should not come nearer than six inches to the top of the sides of the wagon bed.

Just south of the Avenue bridge, on the west side of the street and in the heart of the city is a stock pen, where cattle are fed the year round. The ground is completely covered with manure. If every street, premise, alley, and dump in Austin were perfectly clean there would still be enough flies bred in this place to preserve the fly menace.

Residents of South Austin and the authorities of the State School for the Deaf have made several complaints to the Sanitary Inspector about this place. It should be condemned at once and closed absolutely.

The alleys in the business sections of the city are in no better sanitary condition than those of the residence section as described above. In some parts they are worse, if that is possible; for to the barrels of trash and garbage there is added a great waste paper menace. I characterize it a menace because it is distinctly a fire menace as well as very injurious to the health of the community. If a fire should start between Sixth and Seventh Streets, on the west side of Congress Avenue, the greatest difficulty in checking the conflagration would be the wagon loads, not barrels and boxes, of trash and paper on the back part of the lots occupied by these business houses. It seems impossible that these premises should possibly pass the fire inspector. During the first week of May, one of the daily papers dumped into the alley back of its business no less than two farm wagon loads of paper. If a strong south wind had been blowing, Congress Avenue and the Capitol grounds would have been covered with paper. This was an open violation of a city ordinance.

I was not able to make a first hand study of the alley grade throughout the residence portion of this city, but the casual inspection made, as I drove through the alleys studying the sanitary conditions (and permit me to say I have personally inspected the sanitary conditions of not less than 60 per cent of the alleys in this city), brought to my attention that in many places the seepage from closets and dirty stables along the alley run down onto the front yard of the premises. The flood water washes this filth not only up to the kitchen door, but even to the gutter in front of the house. The alley grade itself, if for no other reason, demands that the lots and alleys be kept sanitary.

The alley grade behind the business houses on the west side of Congress Avenue from Seventh Street to Eleventh Street is on the average about eight feet above the curb grade in front.

"Swat the fly" campaigns with prizes for the killing of the most flies are interesting perhaps, and may have some value as a method of calling the attention of the public to the great need of killing the flies, but, as a practical means of getting rid of them, it is

nonsense. As long as our alleys are strewn with manure, garbage and similar filth, as long as our premises are unclean, as long as we have the open garbage can, as long as the city depends on private individuals to collect the garbage from the homes, as long as our dumps are filled with loads of manure and decaying vegetable matter, as long as the wagons, in which garbage and manure are hauled, scatter this waste from the alley to the dump, as long as Waller, Little Shoal, and Shoal Creeks are nothing but open sewers, as long as open closets line the alleys, as long as these alleys are the dumping grounds for the off-cast of humanity, as long as we have open cess pools and cisterns, as long as we have stock pens within the very heart of the city, as long as these conditions prevail, the fly menace will continue unabated.

"Kill the Flies and Save the Babies" is an excellent slogan for Austin's Chamber of Commerce. But this can best be accomplished by spending the money, which would be offered as prizes to the person catching the largest number of flies, in a campaign of education among the people concerning the great need of more sanitary methods of municipal housekeeping.

CHAPTER IV.

MILK SUPPLY.

CHEMICAL CONTENT.

The test made of the milk delivered to the homes of the people of this city would indicate that, in a large majority of cases, adulterated milk was being sold. Milk was taken from the wagons every other day for one week. The average butter fat varied from .2 in dairy No. 1 to 7.8 in dairy No. 9; the first shows the milk was about 85 per cent water, the latter was an abnormal condition, having the larger per cent butter fat than the milk given by the best Jersey cow. Evidently it was taken from the top of the can, and was partly cream. This indicates that the tests are not an absolute index to the commercial qualities of the milk offered for sale. However, a sufficient number of tests were made to give a general average. This average was 3.1 per cent, or about 2 per cent too low. Either water had been put into the milk or else part of the cream had been separated out.

Samples were also taken from the herd in order to see if the cows were giving a better quality of milk than that which was being delivered by the wagons. Every herd tested was found to be giving a rich quality of milk, showing, on an average, 5.1 per cent butter fat. This is conclusive proof that milk is being adulterated.

The State Dairy and Food Department has filed complaints against seven dairymen for selling adulterated milk. The City Inspector has not made any separate complaints, but a number of dairymen have been found selling milk which was below the standard.

Complaints would be filed against many other dairymen by both the City Inspector and the Pure Food Department were it not for the difficulty of securing conviction even when the evidence is conclusive. Something is quite wrong in the jury system in Austin.

The following tables show the chemical content of the milk offered for sale by an average dairy in each of the four classes into which the Austin dairymen can easily be divided:

DAIRY NO. 1.

No. of Sample.	Specific Gravity.	Butter Fat.	Total Solids.
8-1	1.033	0.4	8.75
8-2	1.030	3.5	11.71
8-3	1.030	3.8	12.07
(These samples were taken on the same day from the wagon. Milk adulterated.)			
20-1	1.028	0.2	7.24
20-2	1.027	4.02	11.80
(Samples taken on the second day following.)			
24-1	1.032	4.0	12.81
24-2	1.036	0.4	9.28
32-1	1.027	5.2	13.00
32-2	1.032	5.0	14.02
(Tests of milk taken from the herd.)			
The average of milk offered for sale.	1.029	2.3	10.52
From the herd.....	1.029	5.1	13.56

DAIRY NO. 5.

No. of Sample.	Specific Gravity.	Butter Fat.	Total Solids.
7-1	1.026	4.8	12.27
7-2	1.25	4.6	12.03
7-3	1.025	4.0	11.05
(From wagon.)			
9-1	1.026	4.6	12.03
9-2	1.026	4.6	12.03
9-3	1.027	3.4	10.83
(From wagon.)			
18-1	1.027	4.8	12.52
18-2	1.028	4.5	12.41
(From wagon.)			
26-1	1.031	4.5	13.16
26-2	1.030	5.1	13.57
(From herd.)			
Tests of milk taken from wagon...	1.026	4.3	11.88
From the herd.....	1.030	4.8	13.36

DAIRY NO. 10.

No. of Sample.	Specific Gravity.	Butter Fat.	Total Solids.
6-1	1.029	4.8	13.02
6-2	1.029	5.0	13.26
(From the wagon. Good milk.)			
12-1	1.026	3.7	10.94
12-2	1.026	4.0	11.30
(Adulterated.)			
28-1	1.029	5.0	13.26
28-2	1.029	5.2	13.50
(From the herd.)			
Tests of milk taken from wagon:			
Tests of milk taken from wagon...	1.028	4.3	12.13
From the herd.....	1.029	5.1	13.38

DAIRY NO. 14.

5-1	1.026	4.0	11.30
(From wagon.)			
11-1	1.026	4.4	12.70
(From wagon.)			
16-1	1.030	5.5	14.12
(From herd.)			

It will be noticed from the above readings that the same dairy sells a better quality of milk on one day than on some others. This may be explained in a number of ways, but the prevailing manner is the removal of part of the cream from the milk. On a certain day there is a falling off in the amount of milk, the customers perhaps are using an amount equal to the greatest day's output. What is to be done? If they do not furnish the regular amount some baby will have to do without its supper or there is no cream for Mr. D.'s coffee for breakfast—the customer is lost. The only solution is to “turn water into milk.” This is so commonly done that it ceases to be miraculous.

The chief cause, however, for the poor quality of the milk delivered to the people in Austin is a misunderstanding on the part of the dairymen of what constitutes good commercial milk. The chief chemist of the Federal Government has ruled that milk should

not be sold which will not test 3.25 per cent butter fat. Many dairymen take this as a proper standard for good milk, entirely misunderstanding the meaning of this rule. It is to prevent the use of milk from herds which are not properly fed, and is the minimum and not an average. So the dairyman has his milk tested, and if his herd is well fed the milk will read about as follows: Gravity, 10.30; butter fat, 5.5; total solids, 14.12. At once he is convinced that he is giving too much milk for the money; the milk he is selling is far above the average milk put on the market by his competitors. He is further convinced that he would be acting honestly as long as his milk equals the so-called Federal rating. He reasons in this wise: "If I take out part of the cream from the milk it will still be a good commercial milk and I will have the cream besides. This I will sell or make into butter." He takes part of the milk from which the cream has been separated and mixes it with the rich milk, and as a result he has about the same number of gallons of sweet milk and a few gallons of rich cream besides. He has not put water into the milk but has separated the cream from the water already in the milk and sold the latter as sweet milk.

The Board of Health rules say that "milk must be reduced to at least 50 degrees Fahrenheit before starting out to deliver it to the customers." Two dairymen against whom complaints had been filed, in answer to the charge, confessed the milk was below the proper standard, but they had no way to rapidly reduce the temperature, and in order to obey the rules they were in the habit of pouring the milk over ice. In this way the water had gotten into the milk. This practice is followed by a number of dairymen.

Preservatives are not used to an appreciable extent by the Austin dairymen. Of all the tests made, not one was found to contain any preservatives. Yet this is one point that must be carefully watched by the city inspectors.

INSPECTION OF THE DAIRY.

As important as it is to see that the people are supplied with a good commercial milk (butter fats and total solids and free from preservatives), greatest concern attaches to the amount of filth the milk contains. Milk is a great absorbent. It is a common carrier of millions of bacteria and is very conducive to the growth

and reproduction of these bacteria. Many diseases are scattered each year through the improper handling of the milk. The facilities used by the Austin dairymen to protect the milk from dirt, dust, and filth are exceedingly unfit and entirely out of date.

After testing the milk from each dairy for the chemical content, I then collected thirty-eight pint bottles of milk to make the "dirt test." Here we used the filter test, a very simple though a fairly accurate one. A specially constructed apparatus, which holds a circular cotton filter, is fitted down over the mouth of the pint bottle. Air is forced through this by a rubber bulb and the particles of dust are collected on the filter. There was but a single bottle of the thirty-eight tested which was any way near free from particles of dust. Fourteen showed a surprising amount of dirt; so much that the white cotton filter was changed into a dark gray. Ten others were a slight degree less filthy. Ten were not very bad, while five contained a slight amount of floating dust.

This floating dust carries with it into the milk millions of bacteria to each cubic centimeter. In the first place, every effort should be made to keep out the dirt, but if it is not, the milk should by all means be filtered before used. Each family should be supplied with the inexpensive filtering machine, as described above, or else the milk should be filtered through absorbent cotton. Either plan is better than the centrifugal method which some cities require the dairymen to use. Dr. Seibert of New York says the bacteria in milk are reduced in numbers one-half by this method of filtering. The New York Medical Journal, in discussing the gross filth that is removed by the filtering process mentioned, says: "It not only keeps dirt out of the nursing bottle, but also out of the alimentary canal of the infant, where, not being digestible, it is reinfected and can only do harm."

The prime sources of contamination of milk with dirt and filth in Austin may be summarized under two main classes: First, the sanitary conditions at the dairy farm; second, the improper methods of handling milk, commonly practiced in Austin.

I. The Sanitary Conditions at the Dairy Farm.

1. Dirt floors in milk houses.
2. Barn and milk houses poorly screened or no screens at all.
3. The practice of setting the open milk container in the stables while the herd is being milked.

4. The failure to thoroughly wash the cow's udders and legs before she is turned into the stables.

5. The failure to wipe dry the cow's udder before milking.

6. The failure to clip the long hairs on cow's flank and bag.

7. The failure to sterilize milk vessels and bottles.

8. Unclean milk wagons and crates.

9. Using infected or contaminated water—from shallow wells, etc.—for detergent purposes, e. g., washing hands of employes, cows' udders, containers, and so on.

II. Methods of Handling Milk.

1. Filling bottles in wagons.

2. The practice of borrowing a few gallons of milk from a friend who drives a wagon for some other dairy. Pouring the milk from one can into another exposes it to the dust of the street.

3. The practice of selling from large containers in the wagon.

4. Carelessness of employes.

The general health and condition of the fifteen hundred cows which furnish milk to the people of Austin is good. They seem to have been well fed and are of a good stock of cattle, mostly Jersey stock, a large per cent of which is registered. From the number of herds I have seen in other cities and some practical experience in raising Jersey cattle, I would say that these herds are far above the average. This is better proved by the test-readings of the milk taken directly from the herd. In no instance did it fall below 1.029 specific gravity, 5.1 butter fat, and 12.90 total solids.

The City of Austin does not require the dairy herds to be given the tubercular test, nor is there any provision for the enforcement of the State law in this matter. Should it be found that a cow reacted to this test, there are no rules for the disposition of such animal. To be sure she would be sold and within a short time some unscrupulous person would resell her to a private individual for his family needs, or perhaps to some other dairyman, claiming to have brought her from the country. Or perhaps she would be butchered and sold as food in the markets. Under our present system of inspection there would be no chance to prevent such a practice.

So far only two dairymen have seen fit to have their cows given

the tuberculin test. Of forty cows in one herd which was given the test, one was found to react. Also this herd is generally considered to be the choice of dairy cattle in this city. An inspection of other herds would no doubt show that a large number of cows which are being milked are infected with tuberculosis.

The feed used largely by the dairymen consists of cotton seed meal, hulls, and hay. In the main, there is a large variety of rations, no one feed being used for any length of time; it is clean and wholesome. In no case did I find a herd which was not properly fed.

The unsanitary conditions and the improper construction of dairy farms is the chief source of the great amount of filth and floating dust found in milk. Of the thirty dairies which sell milk in Austin only five have concrete floors in the milking stables. But these are not properly cleaned, save in the case of a single dairy. Taking the employe's word as a correct statement, the barn floors generally "are washed out about once a week." "Well, we clean it out when it gets so bad we can't stay in there, you know," were the words of one of the employes who was engaged in washing off the floors in one of the better dairies of Austin. The manure in most cases is taken up in scoops after each milking and dumped just outside the door of the barn. Only a very few follow the rule laid down by the Board of Health in the matter of heaping and screening the manure until it is hauled away.

The barns which have concrete floors are also screened. Some are so well screened, indeed, there is very little chance for flies to enter. In these I saw no flies, or very few. While in certain others, which were well screened, there were millions of flies. This was due in the main to the carelessness of employes. They had propped the screen doors open while they were sweeping out or had left it unfastened and the wind had blown it open. Some had not properly hung the door or had failed to provide a means of fastening it.

As has been said above, twenty-five dairy barns have dirt floors. A few are poorly screened, while in most instances there is no screening whatever. Most of them are merely some old barn fitted up with feeding boxes, are practically open, and the wind has free play with the large amount of dry manure scattered over the ground floor. This is blown in onto the milk vessels. Flies are

found in swarms, alighting on the wet udders of the cows, on the green manure, then on the cloth strainer or falling into the milk. The manure to be sure is taken up after a fashion, perhaps as well as it is possible when on a dirt floor. There is little chance of sweeping such a floor and certainly it is never washed out. There is enough left in the barn to be the breeding place of millions of flies, saying nothing of these dumps just outside of the barn.

Fresh cows are often turned into these barns to be fed, either while the milking is going on or afterwards. In either instance there is much danger of particles of urinal discharges getting into the milk. This is very fatal to infants, and the only hope of safety lies in the fact that it is diluted before it reaches the bottle.

If any cow should happen to have tuberculosis or a like disease, it is readily seen that with such floors the milk will easily be contaminated and also other cows are apt to become infected.

There is a very bad custom which is practiced in most every dairy about Austin. I was able to find but three which did not. This is the habit of setting the milk containers in the milk barn while the milking goes on. These are left open in most cases, while some are covered with the strainer cloth. Dust carrying much filth is blown into the can or settles on the wet cloth. Flies covered with bacteria of course alight on this cloth; then when the milk is poured in all is washed into the container together. At once one sees the very bad results of this practice, especially where there are no screens and the floors are dirt. The three at which this is not practiced have built small screened rooms in the corner of the barn in which the large containers are placed. Yet if the floor is not kept clean this is no protection from the dust.

In only three dairies are the cow's udders, feet and legs washed before she is turned into the barn. At these three dairies the cow's udders are wiped off with a wet rag. The long hairs on the cow's bag and legs are clipped at two dairies, while the cows are curried at but one dairy.

The employes often are very careless. One said: "We wash off the udders and wipe them if it is muddy weather and the cow has lain down in mud or manure; otherwise there is no necessity for it." At a few dairies the cow's udders are rinsed with water from the milk bucket. The employe of course pours out the dirty water but milks into this dirty pail. All dairy owners have cor-

rectly instructed their employes to milk with dry hands, but as one said, "You may begin with dry hands but few keep them so, it is such a trouble to keep a little dirty rag on your knee to dry them on. The trousers leg is used more often than the blamed rag."

In practically every case, the milk houses are placed the proper distance from the milk barn and cow lot. However, the premises around the milk houses are not kept in the proper sanitary condition.

The floors of a number of milk houses were very dirty. Some are built of concrete while a majority are plank.

There is a growing sentiment on the part of the dairymen that there is need of better equipment at the farm. Three dairymen have torn down their old barns and have recently constructed well screened modern barns and milk houses with concrete floors.*

METHODS AND CONDITIONS OF HANDLING MILK.

The second great source of the large amount of dirt and filth found in the milk offered for sale in Austin is due to bad methods of handling milk. A larger part of the milk which is retailed is bottled, while much is delivered from open cans in the wagons. These cans are cleansed by merely washing them with warm water in all cases but five, where they are sterilized with steam. The mere washing in warm water in no sense cleanses these milk vessels.

As has already been pointed out, the Board of Health rules require the milk must be reduced to 50 degrees Fahrenheit before starting out to deliver it to customers. The rule should require the milk to be cooled to 45 degrees Fahrenheit immediately after milking and that temperature maintained until delivered so as to retard the growth of bacteria. In most cases the milk is cooled by setting in an ice box, some of which are rather small for the amount of milk handled by the dairy. It is impossible to say what per cent of dairymen reduce the temperature of the milk by pouring it over ice, yet three were honest enough to admit they were in the habit of doing such, and further stated this was not an uncommon practice among dairymen.

The water supply in all but four cases was found to be good.

*See appendix, pages 10, 13, and 14.

One of these was a spring, which was fed by a drain from the cow lot. The city inspector has recently closed this watering place. Another was a creek in which the water stands in stagnant pools the larger part of the year. The other two were wells, which were polluted because of their proximity to cow lots.

In only two dairies are bottles sterilized with steam. In all other cases they are merely rinsed in warm water. I was present at a number of dairies while the bottles were being washed, and in no case was the water over 100 degrees Fahrenheit. These vats were not emptied as often as they should be nor were soaps of any kind used.

The mere washing of the bottles in warm water is no guarantee whatever against bacteria and germs of certain diseases, as typhoid, scarlet fever, tuberculosis, and meningitis. It is the belief of a number of the prominent physicians of Austin that the continuing recurrence of scarlet fever epidemics in this city in a large measure is due to the improper handling of milk. A bottle of milk is delivered to a home where there is a case of scarlet fever. It is handled by persons who are nursing the sick, is set in the sick room itself, and sometimes the patient is permitted to drink from the bottle itself. It is then picked up by the driver of the milk wagon and carried back to the dairy, where it is thrown into a vat of warm water along with a number of other bottles. It is refilled and delivered to some other home, and, in a short while, a new case of scarlet fever is reported to the city health authorities.

There is no machine bottling by the dairymen of Austin. All milk is bottled by hand, and at the farm and in two milk depots in a very sanitary manner, but a large amount of milk is bottled in the wagon, where it is exposed to the dust of the street and where the bottles are unclean. Quite often the driver's supply is exhausted, and he picks up empties along the route, which he fills from the vessels in the wagon. This practice is intolerable, and should be assessed with a heavy fine. If the dairymen are allowed to profit by selling milk to the public they should not be permitted to carry diseases to innocent people, who are forced to place confidence in them and the city inspectors.

In the first place, the bottle is very dirty, covered with dust, fly specks and eggs, and the bottom is lined with dried milk. The

bottoms of three of the bottles tested were covered to the depth of a quarter of an inch with this evaporated milk, an absolute proof of filling in the wagon. In the second place, the opening of the vessel in the wagon and pouring milk into the bottles exposes it to much filth from the streets. Again the milk is spilled in the wagon beds and on the clothes of the driver. The former is rarely washed and the latter not so often as they should be. In the third place, if the bottle should happen to be taken from a home where there is sickness, which is not an improbable thing, it might result in spreading the disease.

I found one instance where a pint of milk was delivered to a household in which there were a half dozen screw worms. The City Inspector at once traced down the cause. The cows were healthy, the method of milking was good, the general sanitation of the premises was above the average. Then how did these screw worms get into the milk? The cans had been sterilized, and the bottles which were filled at the dairy had been well washed. The driver admitted he had filled several empty bottles which he had collected along the route that morning. The mother fly had laid her eggs in the bottle, and as the morning was warm and the milk, too, had not been reduced to the proper temperature, the eggs were quickly hatched.

The health officials exerted no effort to trace down the source of the scarlet fever epidemic in North Austin this year. It was taken for granted the disease was spread through the school room only. If they had made even a cursory investigation they would have found the cause of its rapid spreading was in the improper handling of milk and cases of scarlet fever among the families of handlers of milk. I have found that on one milk route there were eleven cases of scarlet fever. Fourteen days before the first of these developed there was a case in the home of a handler of milk. On another milk route there were nine cases. In a short while a case developed in the home of the owner of this dairy. It was a common thing to find three and four cases on the same milk route. A dairyman ought not to be permitted to use his own goods to the hurt of those who are forced to trust him.

Of the thirty dairies which sell milk in Austin, only six make two deliveries each day. In the other twenty-four, the evening milk is either bottled or put in large containers and set in the

ice box. The general custom is to mix it with the morning's milk before it is started out to be delivered. This is the reason the average milk sold to the people will sour within twelve hours, while sweet milk should keep twenty-four hours if cooled to the proper temperature, that is, to about 45 degrees Fahrenheit, immediately after milking. Bacteria in milk will multiply one hundred million times within twenty-four hours. If the milk is used while fresh there is a less number of bacteria and they are less harmful.

The Inspector of Dairies had not considered it of sufficient importance to ascertain the number of dairies which make two deliveries each day, nor the distance traveled by each wagon in making its deliveries. It was impossible for me, within the time allotted, to fully make this investigation, as only the drivers of the wagons know the extreme point reached. A number of wagons cover as much as twenty miles in making one delivery. Milk wagon routes continually overlap one another. According to the owners of the dairies, the length of time it takes to reach all the customers is the chief cause of their making but one delivery each day. Also it is double expense. Four dairymen gave as a second reason for this practice that people would buy milk in the evening and set it in the ice box to be used at breakfast. The milk often soured and the customers would raise objections to the milk, when its souring was not a fault of the dairymen. Hence they had stopped making two deliveries each day.

The city should be divided into districts and each dairyman be forced to deliver only within the district nearest him, and, during the summer months, all should be required to deliver twice each day. This becomes imperative when we remember the amount of floating dust found in the average milk, and the rapidity with which the bacteria, carried into the milk by this dust, multiply. The practice of delivering milk which has been in the ice box from twelve to fifteen hours is the direct cause of much sickness in this city.

HEALTH OF EMPLOYEES.

The method of inspection of the general health of the employes and their family is very unsatisfactory. The City Inspector is careful to observe the health of employes whenever he visits the dairy, but under the present arrangement it is beyond the scope of his work to attempt to keep up with the health of the families

of the workmen. It certainly cannot be expected of him when one takes into account the many duties which devolve upon this inspector, and the fact that he is supposed to give but a small portion of his time to this work. Again, the relation between the inspector and the City Health Officer is so disconnected should there be a case of scarlet fever or typhoid in the family of some handler of milk neither would be likely to report to the other. There is a great need of unity of effort on the part of the health officer and the inspectors concerning the health and sanitation of the city. This is impossible under present arrangements.

I found it extremely difficult to obtain much exact data concerning the health of employes or their families. From the description given by the employer one would believe the handlers of milk in Austin were absolutely free from sickness of any kind. Yet the inspector has discharged five men within the last six months. Three had venereal diseases and two tuberculosis. But there is no guarantee that these men did not go to some other dairy and obtain employment, for, under present conditions, the inspector is not able to visit each dairy oftener than once every two months. The only way contagious diseases among milk handlers and their families can be properly regulated is through the co-operation of the attending physician. He should be required to make reports of these cases to the city physician immediately.

MILK DEPOTS.

There are but two milk depots in Austin, both of which are called creameries, yet they are more than creameries, for both buy sweet milk and in turn retail this same milk. One of these creameries sells milk only to customers who call at the place of business for it, while the other runs a number of milk wagons.

The location of one of these milk depots is very poor. It is on the north side of a much traveled street, which is not free from a large amount of dust. The other is located on the northeast corner of the block and the streets on both sides are paved. The lots and alleys adjoining both of these places are very unsanitary.

Neither of the buildings is wholly suited for the purpose of a milk depot. The shutters of the doors and windows are not close, nor is either building well screened. The light and ventilation in one are excellent, but very inadequate in the other. The general

cleanliness of one of these milk depots was good, the other place was kept in a very unsatisfactory manner.

In both depots milk cans are sterilized with steam, while the bottles are only washed in warm water. One of these depots is now installing a steam vat in which all bottles and other milk utensils will be sterilized.

One depot sells a large amount of sweet milk to drivers of milk wagons whose supply was not sufficient to fill the orders for the day. Most of this is poured into large containers, carried in the milk wagons, and if delivered in bottles, they are filled in the wagons. These bottles were collected at the homes along the route that morning. A few drivers filled the bottles at this milk depot, but these bottles have either been brought as empty from the dairy and hence exposed to the dust and filth of the street or have been collected along the route. The customers who take milk from these wagons believe they are receiving milk which is brought from the dairy and inspected by the city. The milk they may receive perhaps is just as clean; if it is not, it must be very bad indeed. In this they are mistaken, for this depot receives no milk from inspected dairies.

The other depot delivers practically all the milk it sells. It follows the excellent practice of selling sweet milk only in unbroken lots. There is no bottling in the wagon.

Eight of the twelve dairies which furnish the milk to this depot are not inspected by the city. Although the milk is run through a clarifier, there is no guaranty it is not milked from diseased cows nor that the method of handling is sanitary.

INFANT MORTALITY.

The method of securing data and keeping a record on infant mortality by the health officials is very incomplete. There is a State law requiring physicians to report births to the City Physician in all cities over ten thousand population, but the local authorities do not enforce this law. Along with a fine for not obeying this requirement the city should make it compulsory for children on entering school seven years from 1913, that is, 1920, to show their birth certificates. This measure would not be applicable to children born previous to its adoption. The deaths of infants are reported by the undertaker when he asks for a

burial permit. While this certificate from the attending physician states the cause of the death, the health authorities make no investigation concerning the source of the milk supply in such cases. With the employment of a city registrar of vital statistics, under the proposed plan I make for the reorganization of the Health Department, such investigations would be easily made, for this registrar would also have before him the weekly written report of the inspector of dairies.

Since the city has adopted a partial inspection of the milk supply, infant mortality has decreased over 100 per cent. If such results can be had through the incomplete inspection we now have, how important it is to adopt a plan for the complete inspection of dairies?

The ascertainment of the source of milk supply in cases of infant mortality by the city health authorities is greatly desired. "There is little doubt," says a leading medical journal of America, "that 75 per cent of the deaths of infants reported as caused by 'summer complaints' is due directly to the impure milk supply."

With the setting in of warm weather the newspapers have begun to advertise many wares of private concerns for the protection of "Baby" during the hot summer months. The papers should tell the people that babies die, not because the weather was hot or "Baby" was hot, but because the milk was warm or unclean. It is interesting to note that there is one dairy in Austin which advertises pure milk for babies and invalids. This dairy seems to be as nearly perfect from a sanitary standpoint as it can be made. The milk sells for 60 cents per gallon, and then the demand is greater than the supply.

CHAPTER V.

SLAUGHTER-HOUSES AND BUTCHER SHOPS.

SLAUGHTER-HOUSES.

The general sanitary conditions of the nine slaughter-houses in Austin which supply meats eaten by the people, are indescribably bad. They are all unfit. Surely no similar conditions can be found. The State Pure Food and Drug Commissioner said, in addressing the Woman's Auxiliary to the Chamber of Commerce of this city, "The conditions under which meat is butchered in Austin are the worst I have seen in the entire State of Texas."

In making the inspection of these slaughter-houses, I used the following outline:

1. Name.
2. Location.
3. General cleanliness.
4. Sanitary condition of premises.
5. Construction of building.
 - (a) Floors.
 - (b) Walls.
 - (c) Screening.
6. Plumbing.
 - (a) Condition.
 - (b) Connection with sewer or cesspool.
 - (c) Drains.
7. Disposition of offals.
8. Cooling of meat.
9. Sanitary condition under which it is handled to the butcher shop.
10. Inspection of cattle.
11. Health of employes.

SLAUGHTER-HOUSE NO. "A."

This place is located on East Twelfth Street, outside the city limits. It is wholly unfit. Unclean from every standpoint would be an insufficient characterization. There is no attempt at cleanliness.

The premises are as unsanitary as one could find. Hogs were seen all around, in, and under the slaughter-house, eating offals and dragging them around with their teeth. There are two wooden buildings, about twenty feet apart, connected by a board walk. This walk was covered with blood, hog hair, and decomposing animal matter.

The two buildings are mere wooden shacks, poorly constructed, with wood floors and walls, and unscreened. Myriads of flies were in the house. One wall was actually made dark because of the number of flies on it.

There is no plumbing. The house is not connected with water or sewer, nor is there a cess pool into which the blood may run. The floors are soaked with blood; they are never washed.

Animals are hung up, bled, drawn, and skinned in these houses. The offals are pitched out at the door to the hogs. There is no cold storage in connection with this slaughter-pen. The meat is left hanging in this filth unprotected from the millions of flies until it is put in the wagon to be brought to the market.

The wagons into which this meat is placed have much blood and filth on the bed. A dirty, blood-soaked sheet is thrown down and the meat is placed on this. Over the carcass is thrown another dirty, bloody sheet. The meat is neither protected from the flies nor from the dust of the street.

Cattle, which are brought from the small stock yards, are inspected after a fashion. (This will later be discussed more fully.) Yet these represent but a small percentage of the meat killed at the slaughter-house. A large portion of the beeves killed here never go through the stock pens and are never seen by the inspector. The employes seemed to be enjoying the very best health. Surely, they must have become immune to all diseases arising from filth.

SLAUGHTER-HOUSE NO. "B."

This slaughttr-house is located on East Twelfth Street. It is outside the city limits, though connected with city water.

In spite of the fact that there is water under pressure within the house, the floors are never washed. They are soaked with blood and covered with decaying animal matter. The place is absolutely unclean.

The building is unfit, and the place should be condemned. There

is no sewer connection or cess pool, nor is there a drain to carry off the water and waste from the building. A greater use of water would only add to the filthy puddle on the outside. There is a small trench into which the blood and water run, but this merely accentuated the filthy condition of the place. Five or six different men regularly kill their cattle, sheep, and hogs here, and each leaves it to another to clean the premises.

The building is an old frame shack, with wooden floors and walls, and is unscreened. The offals are supposed to be hauled off into a nearby field and buried or burned, but this plan is not followed out. I noticed pieces of offals lying about the slaughter-house several hours after the last killing.

There is no cold storage in connection with this building. The meat is hung in a so-called cooling room until it is carried to the market. This is a mere boxed-in corner, without windows, and unscreened.

SLAUGHTER-HOUSE NO. "3."

This slaughter-house is located on East Avenue near the Cameron Road. It is unclean, deadly, and has no right to exist. The general sanitary condition of the premises is not unlike that of the two already described.

The building is a frame structure, with wooden floors and walls, and is unscreened. There is water in the building, but it is not under pressure. The drain is not connected with a sewer, but the waste is run off into a ravine. This makes a very bad condition indeed.

The offals are caught and hauled away in a wagon. They are supposed to be buried, but, as a matter of fact, they are dumped out and left to be eaten and scattered about by the buzzards.

There is no cold storage in connection with this slaughter-house. The carcass is covered with a kind of sack and hauled to the market in ordinary wagons which are soaked with blood and very filthy.

SLAUGHTER-HOUSE NO. "D."

Out on the Cameron Road, not far from the one just described, is another slaughter-house. This one differs from its neighbor in no way save in the degree of filth, and the fact that the offals are taken off and fed to hogs.

SLAUGHTER-HOUSE NO. "E."

This place, also, is near the Cameron Road. As to the general cleanliness and sanitary conditions of the premises, it is far superior to the others thus far mentioned.

The building is frame, but it is newer and better constructed. The floors are of wood, but are water-tight, and the walls are white-washed. The screening is poor. There is no water under pressure in the building. That which is used is hauled in barrels. As a result the floors are not well washed. The water and blood is caught in tubs, and emptied into a poorly constructed cess pool.

The offals are fed to hogs, but these are young and growing stock. Before they are killed they are put into a pen and fed nothing but corn for some time. There is no cold storage in connection with this slaughter-house, while the carcass is still warm from animal heat it is carried to the market.

The method of handling the meat is reasonably good in comparison with that of the others already mentioned. This butcher follows another practice which is worth noting. He feeds about two hundred head of cattle all the time. When an animal is bought which is not in good condition it is fed a few weeks before it is killed.

SLAUGHTER-HOUSE NO. "F."

The sanitary conditions of the premises are better than the average, but are unclean. The building is reasonably good. The floor is of wood, but water-tight. The house is well screened.

Water under pressure is run into the building. This is not connected with the sewer, nor is there a cess pool. The blood and water run off through a drain into a ravine. The floors are not often scrubbed; they were very unclean and filthy. The offals are caught in barrels and carried off to be fed to hogs.

In one corner of the building there is a room, very well screened, which is called the cooling room. The carcass is hung here for a short while before it is carried to the market. Through the carelessness of the employes many flies had gotten into this room. The carcass was left exposed to both flies and dust. The method of handling the meat is very unsatisfactory.

SLAUGHTER-HOUSE NO. "G."

This place is northwest of the city near Camp Mabry. The surroundings are very unsanitary. Much decaying animal matter may be seen strewn about the whole place. The odor is sickening. Numbers of bones are piled up in the corner. These are covered with swarms of green flies. The entire premises are unclean and unsatisfactory.

The floors and walls of the house are of wood. The building is poorly screened. There is no water in the building. The blood is caught in buckets. There is neither a sewer nor a cess pool. The offals are caught in boxes and dumped out in a field near by. There is no cold storage or cooling room. The employes seem to be a little more careful in handling the meat, but in no sense is it satisfactory.

SLAUGHTER-HOUSE NO. "H."

There yet remain to be described two slaughter-houses. These two are the best around Austin, and the only two which have any right to exist. But it must not be understood that these are clean and sanitary.

The first of these, which I choose to call No. "H," is located near the Montopolis bridge. The general sanitary condition is reasonably good, but not what it ought to be. This is due mainly to the "sloppy" methods of the negro workmen. The building sits on the side of a hill, so there is good drainage.

The slaughter-house is constructed of corrugated building iron, with concrete floors, and for three feet up on the sides of the walls are of concrete. This concrete is cracked very badly in places and should be repaired at once. The building is very well screened. However, I noticed a number of flies in the killing room.

The plumbing is very good. Water, under pressure, is run into the building. A private sewer carries the blood and waste water into the river just above the bridge. The floors are very well washed after each killing.

The offals are cooked, then run into the river. An offensive odor arises from the cooking of these offals. The people around the slaughter-house tried to secure an injunction against this practice. While the odor may be bad, it is in no sense as harmful to

a community as feeding the offals to hogs or throwing them out to be picked up by the scavengers of the air.

This slaughter-house has no cold storage in connection with it. However, there is a well-screened cooling room in which the meat is hung. The employes are very careless in handling the meat. The sheets used to cover the meat are not well washed, and the wagons are absolutely filthy.

SLAUGHTER-HOUSE NO. "I."

On East First Street, near the Montopolis bridge, is located the other slaughter-house, which is worthy of being called a slaughter-house. All others save these two should be called butcher pens. For cleanliness and general sanitation, this slaughter-house is the best around Austin. The employes seem to be more careful and have a better idea of what constitutes a sanitary place.

The building is very well constructed. The floor and sides three feet up are of concrete. The screening is good. The drippings are kept washed off the floors and walls quite well.

The plumbing is good. A private sewer carries the waste water and blood to the river. A good supply of water under pressure enters the building.

The offals are fed to hogs (growing stock only). Before these are killed they are given rations of corn for some time. But the mere feeding of corn for a few weeks before they are butchered is no guaranty that they are free from tuberculosis which they could have easily gotten through being fed the offals from the slaughter-house.

There is no cold storage in connection with this slaughter-house. Meat is hung for a while in a well-screened cooling room.

BUTCHER SHOPS.

Realizing the impossibility of inspecting all of the butcher shops in the city, I selected ten which are best known to the general public. These will give a fair index to all others in the city. I shall not discuss each separately, as in the case of slaughter-houses, but I shall present a summary of conditions as I found them. In making a study of these butcher shops I used the following outline:

I. Name.

II. Location.

III. The slaughter-house in which the meat sold here was butchered, and the sanitary condition under which meat is brought to the shop.

IV. The building.

1. Floors.
2. Screening.
3. Plumbing.
4. Refrigerator construction and general cleanliness.

V. The handling of the meat.

1. The practice of hanging carcasses in the open.
2. Sanitary conditions under which sausages are cut up ground.
3. The sanitary conditions under which the lard is rendered.
4. The sterilization of cleavers, knives, and saws.
5. General cleanliness of the hooks on which the meat is hung.

VI. Sanitary condition of the room.

VII. The disposition of bones and unsalable meats.

VIII. Sanitary condition of adjacent alleys.

IX. Health of employees.

X. Cleanliness of aprons and clothing of the employees.

The greatest handicap in keeping a sanitary market is the fact that very few buildings used for this purpose are at all suited for this business. A number of butchers make an honest effort to have a sanitary shop, but certain material conditions prevent this. The buildings are not large enough to put in a cold storage, if the trade would justify such. In only one of the ten butcher shops inspected was there a cold storage maintained in connection with the market. The refrigerators are too small. The result is that fresh meat, brought from the slaughter-house, is hung on racks in the open, unprotected from the dust of the street and the flies. To put this meat in the refrigerator before the animal heat leaves it would ruin the other meat. This was not necessary in the market equipped with a cold storage, yet it is a common practice. Carcasses are often hung in the open because the refrigerator is too small to hold all the meat brought from the slaughter-house.

This is a very dangerous practice. The shutters will not keep out the dust, even if they were closed, but in order that there will be as much draught as possible, the doors and windows are left open, and only the screens are fastened. The dust blown in from the poorly kept streets and alleys is laden with much filth. When we take into account the very bad dust menace in this city, we come to realize the absurdness of this practice. The poor screening of seven of these markets had permitted the entrance of hundreds of flies, while the other three markets were well screened, yet many flies had gained admittance through the carelessness of the employes. It seems unreasonable that while we demand the clothes we buy to be protected with heavy spreads and plate glass, we will eat meat which has been exposed to all kinds of filth.

The practice of hanging the fresh meat in the open till the animal heat leaves it and then, perhaps, till room is made for it in the refrigerator, can be avoided only by the erection of a city abattoir or the handling of nothing but packing house meat. A cold storage would be built in connection with the abattoir where the butcher's meat could be stored and delivered to him when needed.

The meat in the butcher shop is rarely inspected. As has been shown already, it is impossible for the inspector to perform all the duties devolving upon him as inspector of dairies and slaughter-houses, to visit the butcher shops often enough to keep in touch with the meat sold. He has been forced to follow the practice of waiting for complaints by the purchaser. In such case he traces down the source of the meat and inspects the butcher shop in which it was sold. While I was in the inspector's office a lady phoned for him to come and inspect some meat just delivered at her home. It was a piece taken from a carcass of an animal infected with tuberculosis. This lady and her family escaped eating this diseased meat, but how about the number of other families where this condition was not detected? This beef should have been condemned on foot, but it is impossible to inspect the cattle before they are killed under our present scheme. While if the city had an abattoir, either this meat would have been detected before it was killed or at least before it left cold storage for the markets. On another day a man called the inspector's attention to some sausage he had just bought. When it was put over the fire it made

such a disagreeable odor that the people were forced to leave the room. The inspector found this sausage was made of boar's meat, a thing which would not have happened if we had a municipal abattoir.

These very bad conditions are to a large measure beyond the control of the individual butcher. However, he permits certain practices and conditions to exist which the city should prohibit. Three of these markets sell vegetables and fruits, which are kept in screened boxes sitting on the sidewalk in front of the shop. The screening in no way protected this food from the dust of the street. The State Dairy and Food Commissioner defines as "filthy" all food which is not securely protected from dust. In all ten of these markets bacon and sausage are hung on racks in the front part of the room and in no way protected from flies and dust.*

Lard is rendered in open kettles in the back yard of the market. This yard is generally unclean and the alley covered with refuse and decaying vegetable matter. In all cases but three the back yard is also used as a horse lot, and in three instances was used as a pen in which sheep are fed for a short while before they are butchered. Generally speaking, this horse lot is covered with manure. These open kettles permit much dirt and filth to be blown into the lard. At two places the kettles were covered, but the covers were of little value as they did not fit down tight and they themselves were covered with dust and chicken feathers. In these filthy back yards sausages are boiled in open kettles and hung out in the open air to drip.

There is permitted to collect behind the refrigerator much trash, rubbish, scraps of meat, and bones. It is back here, under these unsanitary conditions, where the sausage is ground. Board of Health rules should require all market men to grind sausage in the front part of the room, where the public can see what goes into the mill.

The refrigerators are not kept in a sanitary condition. In four of the ten shops there was a very offensive odor, an absolute proof that they had not been properly cleaned and had stored decayed meat. The offensive odor from two of these markets, two of the largest in the city, makes it very disagreeable to even pass by the front door. In one refrigerator I found a carcass from which the

*See Appendix, p. XI.

skin had not been removed. This skin was covered with dried blood and animal waste.

Two of the shops follow the very bad habit of leaving large pieces of meat on the blocks to be cut as sold. In each of four markets a large amount of meat, ground sausage, and soup bones were lying uncovered on the front counter. Five markets attempt to sell their meat and fresh sausage from the refrigerator, or, as in the case of one in which there is a large ice box sitting near the counter, in which is stacked the carved meat. This box was well covered and in excellent condition. The blocks on which the meat is cut up were in a very bad condition in three shops.

Three of the ten markets claimed to sterilize all cleavers, knives, saws and other instruments with hot water "every few days," four reported "once a week," and three "occasionally."

In four of the markets the scales were very dirty. These followed the bad practice of laying the fresh meat on the uncovered scales. The blood and water dries, flies light on it, and dust settles on this in large amounts. The next piece of meat will thus be contaminated with much filth. The other six tore the paper first, so the meat was never allowed to touch the naked scales. In but a single market did I find the hooks and racks at all clean. In the other nine they were covered with grease, dust, dried blood, and fly specks.

No butcher admitted throwing bones into the trash containers, yet in the back alley I found three boxes and one barrel filled with paper, bones, and scraps. These were covered with swarms of flies. The general disposition of bones is to pitch them over into a box and give them to the negroes and Mexicans, but this itself is a very undesirable means of getting rid of them. The boxes are dirty, and the bones are covered with dust and flies. The negroes and Mexicans carry these to their shanties, where they are used in making soups.

In no one of the ten markets inspected did the workmen wear clean aprons. They differed only in the degree of filth.

CHAPTER VI.

BAKERIES.

The very bad conditions of the bakeries of Austin are due, in the main, to three things: (1) The buildings are unfit; (2) these are not properly located; (3) carelessness on the part of employes.

There are too many bakeries in this city. On an average there are twenty baking the entire time. The output of any one of these twenty is small, and the income from this business, to any one baker, is very meager indeed. Few make more than a bare living. It matters not who puts up a bakery or under what conditions food is handled, some one will trade with him. In this way the business is so scattered that there is no chance for any one man to get a sufficient trade to justify a first-class bakery. The natural consequence is that houses that rent cheap are sought for by the bakers. The locations are undesirable and the buildings unfit—in fact, there is not a real first-class bakery in Austin.

I have made a personal investigation of every bakery in this city, and what I say is entirely first-hand information. A complete description of the location and building, and a discussion of the manner of handling the food product in each of these would be too long for this paper. I shall have to content myself by giving a summary of these conditions, including a description of a few from each class, if we may speak of them at *better*, *average*, and *totally unfit*.

THE LOCATION.

There is not a bakery in Austin properly located. All, except five, are within the yard of some residence, joined to a residence, or occupying one of the rooms of the basement of a residence. The five exceptions are no better located. They are jammed in between other business houses, where the light and the ventilation are very poor. Not only are the majority of the bakeries within residences, but they are also not in the best residence portion of the city. Generally they are located along some street where the small business houses have driven away the better houses.*

The sanitary condition of adjacent alleys is no better than the

*See Appendix on IX

average alley of the city. These, too, are strewn with all kinds of litter and waste, and in three cases the mixing room of the bakery opens into poorly kept horse lots.

The premises are unclean. The street in front is very dusty and poorly kept. The yards are neither free from trash nor the open garbage can.*

THE BUILDING.

Not one of the buildings occupied by a bakery in Austin is fit for the purpose for which it is used. In the main, they are old and open frame buildings which do not protect the food from the dust of the street. They were not erected for the purposes of baking. Most of them were formerly used as residences or small stores. The smallness of the rooms causes an improper storing of the food products and the crowding of the baking facilities.

There are two bakeries in Austin which have dirt floors in part. All others have floors made of planks which are open and allow a great deal of dust to collect in the cracks of the floor and corners of the room. It is practically impossible to keep these floors clean. They should be of hardwood or concrete, and should be mopped after each baking. The general appearance would lead us to believe that few are occasionally scrubbed, for a large majority are covered with grease and dirt.

All the bakeries, save two, are screened after some fashion. Five were well screened, yet a number of flies were seen in the mixing room, due probably to the carelessness of the employes. In others, the screens were improperly hung or were torn, thus affording very inadequate protection of the food against flies.

There is one very serious criticism of the construction of the buildings used for bakeries of which none must be excepted. Much dust and filth is allowed to collect on the top of the oven. Generally the oven is covered with dirt, hence there is no opportunity of either sweeping or dusting it off. This condition is a natural consequence of taking a building, erected and used for a long time for some other purpose, and by simply adding an oven, transforming it into a bakery. On top of the ovens were seen dirty buckets and cans covered with dust and filth. This dust is bound to fall

*See Appendix, p. XII.

on the cakes and pans of bread as they are put into and taken out of the oven, but the food is crusted over, and the dust is not seen.

Six of the twenty bakeries in Austin are well lighted and properly ventilated. There are four bakeries which should be closed by the city health authorities, if for no other reason than because of the inadequacy of the lighting and ventilating facilities. No one is more convinced of the total unfitness of the buildings used as bakeries in this city than the leading bakers themselves, yet no one feels that he could secure the trade to justify the erection of a modern, first-class, up-to-date building.

THE MANNER OF HANDLING THE FOOD PRODUCTS.

The degree of cleanliness practiced in the handling of food stuffs in the average bakery is very slight. This may be as great as is possible under the physical conditions of the buildings and premises, yet this does not justify certain very bad habits so common to our bakeries. Dust is allowed to collect on the tables, on the buckets, and in the corners of the mixing room. This is not merely flour dust, but flour mixed with dirt, not mud, but dirt! I was able to find but three bakeries where conditions showed that there was a complete "cleaning up" after each baking. Here the utensils were well washed, the buckets wiped off with a damp rag, and the floors mopped. In other cases I found underneath the counters dirty trays, buckets, and boxes which were covered with dust and spider webs.

The workers in foods wear but a single garment above their waists. Their arms are naked. The flour dust settles over their bodies, and this, mixed with perspiration, is bound to get on the food at times. But they say the place is so warm it is impossible to wear more clothing. Many workers are very careless about the food handling. One baker, who had been a proprietor of a bakery in Prussia before coming to America, said: "It is impossible over here in America to get workmen who are careful. I know there is not a sanitary bakery in Austin, but what are you going to do? If they don't keep the place in a sanitary manner and the dirt out of the food, I can't help it. We do our best to watch everything. If I turn one off because he comes in drunk and messes everything up, perhaps I am keeping dirt out of the people's stomach, but soon I will have no bread to put there. I can get no one to take

his place. You see, men skilled in baking are few, and we have to take what we can get." But this explanation does not satisfy the people. At least, it does not furnish any protection to the public.

The plumbing condition is very good in all save six bakeries, but these are not within the sewer district. In the mixing room of a certain bakery there is a hydrant without a sink to carry off the waste water. An overfilled slop bucket is sitting in the corner. The floor is covered with grease and dirt. In all bakeries the toilet rooms are outside of the building and some distance from the handling of food stuffs.

There are but three bakeries in Austin in which the living quarters are not near the food handling. In four bakeries persons sleep in the mixing room itself. In six, bedrooms are above the bakery. One bakery is in the basement of a residence, while in the others the living quarters are farther away from the mixing room, though they are in the same building. It is a common thing to see the dining room of the family located between the mixing room and the sales room. This is also used as a kind of living room for the household. Children are often seen playing with their toys, pet cats, and dogs in the sales room itself.

The health of workers in foods is very good. However, there were three men, each in different bakeries, who were coughing quite often, and were spitting in the ashes before the furnace door. The city inspector, however, said they were in good health.

Bakers are subject to colds. They work very late each night in the hot oven room, and in going out into the night air they are apt to take a cold. We should note that the living quarters near the food handling are not, as a rule, for the workmen, as one would suppose, but are occupied by the owner of the bakery and his family. This conclusively shows there is no necessity for maintaining living quarters near the place of food handling.

These workers in foods are not furnished sanitary cuspidors, but must go to the door or window, or spit on the floor, or, perhaps, in the ashes in front of the oven. In one place visited, there was an old wood stove sitting in a dark corner of the room. The top was turned back, and the workmen had spit tobacco all over the top and front.

I did not visit a bakery in which there is sufficient care and

protection given to food supplies. The flour is stacked in a room generally very dark and close. The sacks are covered with dust. When a sack is taken down from the stack the dust falls over the clothes of the workmen. The sack is carried to the mixing pan, and much of this dust goes into the bread with the flour. Some even shake the sacks while they are held above the mixing pan.

Lard, sugar, and spice barrels are commonly left open. The butter is half unwrapped and thrown into boxes. This, too, is covered with dust. It is a common practice to keep a pan of melted butter, with which the bread pans are greased, sitting on top of the oven or a table nearby. This is also uncovered. While I was inspecting a certain bakery, and it is one of the best in the city, a workman reached up and took from the top of the oven an open pan of melted butter. The dust came, too. He took a brush with which he dusted out the bread pan and dipped the same into the melted butter and greased the bread pan with it. It is most unusual to see sediment in the bottom of these pans of melted butter, and occasionally a fly or two.

It is the common practice to set the hot bread, just taken from the oven, in the racks to cool before it is wrapped or up into the show case. This is an excellent practice, if the cooling room is free from dust and the racks are clean. In four of the bakeries bread is set in very dirty racks. The general practice is to put the bread, cakes, and pies on boards in the rooms where food supplies are stored. This is very unsatisfactory.

HANDLING OF BREAD IN WAGONS.

During February and March of this year the women of Austin registered many complaints against the bakers because the bread is not wrapped before it leaves the bakery. The wrapping of bread is an excellent practice, and could be easily adopted by all, if the people themselves knew the qualifications of good bread. In spite of their beliefs, they have proved that they do not. They want moise bread. If the bread is cooked at the proper temperature, that is, until the starch cells begin to open, the average person will not buy it, though it is the only wholesome bread. Two bakers told me that during the last year, they had tried the plan of cooking thoroughly their bread, so that it could be wrapped while warm, and each time their trade decreased. If the bread is not

well cooked it will mould, if wrapped while warm. If the people of Austin want wrapped bread, they must learn to eat that which is well cooked and wholesome. There is but one bakery in Austin which wraps all of its bread before it is sent out in the wagons.

The driver is often very careless in handling bread. He piles it high on a tray or on his arm, thus exposing it to the dust from his clothes and perspiration from his bare hands and arms. More than likely he is wearing the same suit he had on while feeding, currying, and harnessing the horses in the morning. The wagons are equipped with back curtains, and the front is generally open, thus exposing the bread to the dust of the street. The driver often fills the basket or his arms while seated.

The public should not criticise the bakers for failing to wrap the bread before it is delivered, until they change some of their own habits. The bakers and those who retail bread have a great deal of trouble keeping women customers from taking the bread in their hands, pressing it, picking off pieces to taste, and then returning it. "I will not try it," they say. This is a very unclean practice, and common decency should forbid it.

CHAPTER VII.

HOUSING.

THE GENERAL HOUSING CONDITIONS.

The housing conditions in Austin are very bad indeed. The one problem which should attract the most earnest attention of all the people of this city is the housing question. It is, without doubt, a problem which takes on serious aspects. Certainly, there are no tenement districts here as in the large cities of America (using the term "tenement" as it is commonly used). Yet there are certain housing conditions which have an effect on the people, not at all unlike that of the squalid tenement houses. It is a reproach to our enlightened people, that we allow certain conditions to exist any longer. Here, in this beautiful Southland, where the land is cheap and sunshine is free, people are crowded together in small huts, one and two families in a one-room shantay, and little children are forced to play out in the dusty street on the filthy, dirty creek or river bank where their homes are located.

There are many blocks of shanties in Austin which ought to be destroyed, and if nothing else is done with the ground, it is better to let the weeds grow and soak up the filth and foul poison which is sown deep in these places. They are but breeding places for moral and physical degeneracy, contagious diseases, and crime. The very soil is polluted; it is reeking with hookworms, and in its present state unfit for human habitation. I speak more particularly of what is known as the Mexican settlement between Colorado, Rio Grande, Fourth Streets, and the river front; and also of certain districts populated by the negroes and Mexicans along the banks of Waller Creek.

METHOD AND OUTLINE OF STUDY.

A study of the housing conditions of Austin must be made in accordance with the three classes of population, American, Mexican and negro. Not that in many places the three races will be found living side by side, but, taken in the aggregate, there are three distinct sections of the city which may be described along racial lines. In making this study I selected what might be called

an average section, and I believe that conditions found there will represent the general condition of the whole city. The following outline was used in making a study of each of these districts.*

1. The house and yard space.
 - (a) The size and fitness of the house: (1) light and ventilation; (2) rent.
 - (b) Percentage of the lot unoccupied by buildings: (1) Grass and trees; (2) paved sidewalks and streets; (3) drainage and sanitary conditions.
2. Congestion.
 - (a) Number of inmates.
 - (b) Room congestion.
 - (c) Roomers, boarders, homes, and light housekeeping.
3. Water supply.
 - (a) Source.
 - (b) Convenience to living quarters.
4. Sewage.
5. Condition of plumbing; facilities for ordinary cleanliness.
6. Disposal of garbage and waste.
7. National traits.
8. Children:
 - (a) Number of children in each dwelling.
 - (b) Manner in which they live.
 - (c) Association with immorality.
 - (d) Sanitary conditions and so on.
9. General sanitation.
10. Transient and permanent residents.
11. Relation to business houses, industries, saloons, and immoral resorts.
12. Home industries.

THE THREE CLASSES OF HOUSING CONDITIONS.

The Section Settled by Americans.

The housing conditions here are fair. However, throughout the city large areas of shanties may be found. One of these, which is located right in the center of the best residence portions of the

*Palmer, "A Sanitary and Health Survey."

city, is the block between Eighteenth and Nineteenth Streets and Guadalupe and San Antonio Streets. These shanties ought to be declared nuisances by the City Council and razed to the ground. If the property owner does not care enough for the interest of the whole people, or has not the money to improve his property, he should sell to someone who can and will do so. Often one sees a very beautiful residence practically surrounded by shanties or old houses about to fall down, and by yards poorly kept. The great number of these places destroy the civic beauty of Austin as a whole.

These old houses are generally built very close to the street. There is no grass or trees, no sidewalks or paving. The drainage is often to the front of the yard, and the sanitary conditions of the premises are very bad. Trash, cans, rags, rubbish, are scattered about the place; or the yard has been turned into a horse lot. The alley is in a miserable condition. Often an old uncovered well is in the yard, serving only as a breeding place for mosquitoes. It is a singular fact that these places have no sewer connections. Usually a poorly kept dry closet sits in the back part of the lot. It matters not how clean the premises of the adjacent places are kept, this will furnish enough breeding places for flies to destroy the good results of the neighbors' efforts. This condition is not right.

The average housing conditions in this section of the city are good. About 50 per cent of the lot is unoccupied by the buildings. Very few of the houses are crowded close together, and grass and flowers are growing in the yard. A place without trees is the exception.

Very few of the streets are paved, and there are but few concrete sidewalks. Of the three hundred miles of streets in the city, less than ten miles are paved. However, there is a great deal of improvement being made in this line. The city has begun to force the owners of vacant lots to put down concrete sidewalks. The dust menace continues to grow worse.

The drainage is generally good, though the sanitary conditions are not so favorable. Part of the lot is often used for a horse lot or cow lot and the manure is never put in screened boxes as required by city ordinance, nor hauled off as often as it should be.

Sufficient light and ventilation are found in the average house.

There is little or no congestion in this section. The average size of the houses on the blocks, carefully studied, was a place of six rooms; the average number of people living in one house was four.

The water supply generally comes from the city pipes, yet there are no less than three hundred wells used, in the section settled by Americans. As a rule the pipes are convenient to the living quarters. On these five blocks studied, there were three private wells in use; four were not in use, and only one of the four had been sealed up. The open wells contained a great number of old cans, boards, and much trash. Many mosquitoes were seen along the walls, and continually flying away from the well.

Three of these blocks are reached by the sewer system, on which there are twenty-eight houses connected with the sewer, and five not connected. If this can be taken as an index, an exceedingly large number of houses within the sewer district do not take advantage of it. Two blocks were located without the sewer district. On these blocks were seventeen dry closets sitting on the back alley, and there was one cess pool, poorly constructed and serving as an excellent means of soil pollution.*

The plumbing conditions and facilities for ordinary cleanliness were very good on an average. Some few cases were found to be in a very bad condition, however. There is a great need for a modern, up-to-date plumbing code.

The garbage and waste is generally collected in tubs, buckets, and cans, if collected at all. Many places that were visited, it was thrown all over the back yard and alley. The handling of this will be discussed more thoroughly under the subject, "Garbage Disposal."

As a rule, the children in the homes of this class of people live under favorable moral and moderate sanitary conditions. But my attention was brought to many notable examples of exceptions to this rule. A number of children on East Fourth, Fifth, and Sixth Streets have neither good morals nor good sanitary surroundings. They often live in the back end of a dirty store and have for their playground a poorly kept alley in the rear. Some live in houses which join poorly kept livery stables or wagon yards; while others live in very dirty apartment houses. They do not get the proper amount of pure air and sunlight. They early become morally and

*See Appendix, p. XV.

physically degenerated, their education being entirely deficient. On East Seventh Street, there was a white family living in a damp, dirty basement. The light and ventilation were poor, there being but one small window to let in air. This family was composed of two women and three children. One of the women has a bad case of tuberculosis.

In the southeastern section, along the river, I found some very bad conditions existing. A tent ten feet by twelve housed two women, one man and six children. In a one-room house there lived an old lady, a younger woman, who had tuberculosis, her husband, who was a drunkard, and three children.

One very serious criticism which can be made to the housing conditions in the best section of Austin is the small distance between dwellings and saloons. The saloon limit is entirely too large. It is not at all restricted to the business district of the city. Saloons may be established in any part of the city, with the exception of a small area bounded on the east by Duval Street, on the north by the city limits, on the south by State Street, and on the west by the west line of the Insane Asylum grounds. There are six saloons within the purely residence section. These places of vice are practically surrounded by houses, some facing, some adjoining, and others touching on the back alley. When the children of these homes go out to play they are forced to come into contact with these bad influences. Over fifty school children pass one of these saloons each morning and each afternoon.

THE SECTION SETTLED BY NEGROES.

There are three large sections of the city almost entirely populated by negroes—Wheatville, East Austin, and Clarksville. In the Wheatville district, the houses, or shanties, are scattered. Perhaps this is due to the fact that they were not built by some unscrupulous realty owner as is the case in some other sections of the city. A large number of families own their own homes. As a result, there is not existing a crowding together on small lots, which is so characteristic of numerous blocks in the city. On an average, at least 65 per cent of the lot is unoccupied by buildings.

I had a number of these negroes to tell me they had moved out away from the dust and filth of the city so their children would have more room to play, and would escape the commonly practiced

immorality which comes from too many living in the same house or too close together. Here they get enough sunlight and more fresh air. I made a house-to-house canvass of this entire district.

The general appearance of the premises are bad. There is no grass, very few trees, and no paved walks or streets at all. To be sure, there are few walks of any kind, and the streets are not even graded. The drainage is generally to the back or side of the lot. An actual count showed that there were eighteen lots where the water ran directly into the front yard. The general sanitary condition of the premises is very bad indeed. Often the yard space is used for a horse lot or a cow lot.

As a rule only one family lives in a house. I found six places, however, where there were three different families in the same house. Five of these houses had four rooms each, the other only three rooms. Eight shanties of three rooms each housed sixteen families, in which were fifty-eight people.

This section of the city is supplied with city water used for domestic purposes, but there are no fire plugs in the district. The hydrant is generally found out in the yard, rarely ever in the house where it would be convenient to the living quarters.

This part of the city is not accommodated by a sewer. Open privies sit on the alley of each place. These are rarely ever cleaned by the scavenger and are never screened.

No plumbing is found in these houses, nor are any facilities for ordinary cleanliness. Bath tubs are entirely out of the question. A very few of the houses are screened.

The garbage and waste are scattered about the lots and alleys. Why should they collect it, since the city wagons rarely, if ever, cover this section? Certainly, the wagons go out there twice or thrice a week. But for what purpose? To collect garbage and waste? No, to dump the garbage and waste they have collected from other sections. The city wagons have almost turned the streets and alleys of these people into dumping grounds. There is a city dumping ground where all kinds of trash and rubbish are thrown, a large part of which should be cremated, almost in the very center of Wheatville. The drivers are not always careful to dump the trash in that one place. Frequently the wagons are emptied into a street or alley before the dump is reached.

Private wagons, also, haul manure from the lots and stables out

to this dump. These are piled so high, as is the city dump wagon that the manure is jolted off along the streets. I have seen private wagons dump cans, rubbish, and manure in the streets before they reached the dump. A few of the negroes in this section have a number of hogs, which feed on the slop they haul from the homes of whites and from restaurants and hotels. They do not make a complaint to the city about the offensive dumping grounds because they fear that they would have to remove their hog pens. Others have become so accustomed to this condition that they take it as a matter of course.

These people have a mania for collecting cans, bottles, and trash, and strewing it about their houses. They huddle together, though not as much as those who live in the parts of the city where the houses are joined close together. It is the opinion of the negro ministers of the city that there is not as much profligacy and other kinds of immorality here as is found in the average section populated by the negroes in the city.

On an average, there were six children in each house of the four blocks canvassed. These children live under adverse circumstances. Their food is not protected from the flies; it is poorly cooked; and frequently food that they get is what is left uneaten at some white home where the mother is cooking. This is often brought to them rolled in a dirty apron. The ground on which they play is infected with hookworms. They breathe the air from the decaying vegetable matter in the city's dumping ground. They go to school in a building surrounded by unsanitary premises. The dump wagons pass by on the south side of the building on the way to the dumping ground. As said above, these wagons are piled high, and the rubbish, manure, and other filth are scattered along the street. The building is not over one block from the dumping ground itself. The picture on page 17 of the appendix shows the bad surroundings. I would call especial attention to the draw on the south side of the picture. This is strewn with litter and filth. The color of the water would indicate that it is seeping from some private sewer or cess pool.

It is no wonder that there is a fast increasing number of tubercular patients among this race. Who is surprised at the moral and physical inefficiency of the "modern negro" as compared with

the "old time negro," when from early childhood to old age they live under such bad housing conditions?

The housing conditions of these people bear a close relation to the sanitation and health of the entire city. Into this dirt and filth the people send their clothes to be washed clean and laundered. They are exposed to the dust, filth, and all kinds of unsanitary conditions. No one ought to be surprised at the source of an offensive odor which often attaches itself to the clothes when they are returned. From these places come our cooks each morning. The very clothes they wear are covered with this filth. From such shanties come the nurses of our infants.

I have given an extended description of the housing conditions of Wheatville, not because I have not made an equally close survey of the larger part of the other sections inhabited by negroes, but rather because this well represents the better sections of the whole city. This section can be taken as a pointer to the real condition of the city. It may be somewhat above the average, but it is certainly no lower.

As bad as the housing conditions are in the section described above, there are block after block elsewhere far worse. They will be found largely along Waller Creek and the two draws which run into it, and three blocks near the mouth of Shoal Creek.

These shanties have one, two, three, and four rooms. The average size of each room is not larger than twelve by twelve feet. The small windows permit a very insufficient amount of light, and the ventilation would be very poor were it not for the large cracks in the walls. The average size of the lot does not exceed twenty-five by fifty feet. The average cost of the house and lot to the owner is not over \$200. The average rent is \$1.00 a week for each room, making a three-room house \$12 a month or \$144 a year. The average net per cent made on these investments will on an average, exceed 60 per cent per annum.

Often the lot is not over twenty feet deep, or even less. The back of the shanty at times is sitting on stilts over the bank of the creek.*

There is one particular piece of ground of one hundred and eighty by forty feet. On this ground there are nine houses. The average size of the houses is a row of three rooms, one directly

*See Appendix, p. XVII.

behind the other. In these nine houses there live twelve different families, ninety-two people in all. This is a characteristic condition and in no way an exceptional one. Another plot of ground is ninety feet in front and the depth varies from fifteen feet to thirty feet, according to the bank of the creek. There are four houses on this plot of ground. The level of the yard is below that of the street. Each house save one has three rooms. Five families live in these four houses, twenty-seven people in all. A number of instances illustrating this could be given also.

Along the banks of Waller Creek I found four wells which are being used. Their location proved that they were polluted, without the necessity of making a bacteriological test. The filthy water of the creek seeped into each. In most cases where there are hydrants they are in the yard.

There was no plumbing for investigation. Practically all facilities for ordinary cleanliness were lacking.

There were no sewer connections in this part of the city. An open privy sits on the bank of the creek at each place, or close enough for the human waste to be readily pushed into the creek. This creek is nothing but an open sewer, for garbage and all waste are dumped into the creek. It does not run more than three months in a year, so all this refuse is left there, hidden away to rot and pollute the air. Here, along the creek, huddled together in miserable shacks, are a number of Austin citizens. Under such unsanitary environment children are being reared. Not only is there physical filth on every side, but the moral filth is as bad or worse. They are forced to associate with every description of immorality.

There are a few stores, wagon yards, bottling works, wood yards, and horse and mule lots located here, which add to the existing bad conditions.

What kind of citizens can we hope to come from such places of squalor, sickness, and filth?

The children who live under these horrible conditions are not the only ones who must suffer. At Ninth Street the creek divides, making a high point between the two branches. Here sits Bickler school, the largest ward school for white children in the city. The south breeze comes fresh from this deep, open sewer to these children.

The lower part of Shoal Creek is in almost as bad a condition as Waller Creek. Here, almost completely surrounded by this open sewer and by unsanitary premises on every side, is the West Side school for the colored children. There is no sewer even to accommodate this school building. Their dry privies are unscreened and poorly kept. Here, with stench and filth on every side, their south breeze, fresh from the stagnant water of the creek, the Mexican tenements, and the city dumping ground along the river bank, add to the already unbearable condition.

I have seen clothes hanging over this creek to dry. The shanties in which they are ironed are reeking in dirt and filth. I have seen these same clothes taken from such holes of filth and disease directly to homes to be worn by the white children of refined families.

THE SECTION SETTLED BY MEXICANS.

Between Congress Avenue on the east and Rio Grande Street on the west, Fourth Street on the north and the river on the south, is a section which may be called the Mexican district. It is true that the tenderloin district of Austin is within these boundaries. It might seem best to limit the Mexican district to Lavaca Street on the east, but as there is no definitely defined tenderloin area, and as there are Mexican homes, which have children in them, on all sides of these houses of prostitution, it becomes necessary to bound it as I have done. Furthermore, the men, women, and children are forced to pass directly by these houses on their way to the shops of the city, to places of work, and to their schools. There are ten large houses of prostitution and a great number of small ones. Within this district are a number of Austin's largest industries. Working men and women, going to and from work, are forced to pass directly by houses of prostitution. These places of business, in turn, make the housing conditions worse. The heavy traffic on the streets creates a great deal of dust, and the stables which are rarely clean, are fertile breeding places for flies.

Within the bounds mentioned there are, by actual count, five saloons. These are surrounded by Mexican shanties and houses of prostitution. Mexican children play in the street, directly in front of these saloons and assignation houses. It is within this district that the larger part of the crimes tried in the justice and corporation courts are committed.

Bordering this section on the south, along the river front, is the main city dumping ground. The south breeze strikes this place first, and the filth has not had time to oxidize before it is blown into these shanties. The Mexicans have all the filthy habits described already, but you must add to them the worse filth of the dumping ground. (There is, perhaps, a less amount of drunkenness among this class of people than negroes.) As has been said previously, Mexican men, women and children follow the city wagons to the dump to pick out the old rage, cans of spoiled food, partly rotten apples and other fruits, old boxes, and old cakes. That which is not eaten on the spot is carried to their homes, along with the worst kind of filth. The general sanitary conditions here are intolerable.*

The average size of a house in this section is two small rooms, very poorly lighted and ventilated, often having but one door and one window to the entire room. It is absolutely unfit for human habitation. The percentage of the lot unoccupied by buildings is not over ten. The houses sit directly on the street, and the back is strewn with trash and rubbish. Also, in the back sits an open privy, unscreened and poorly kept. There are no sewer connections in this section.

On Nueces Street, in one house in which there is but two rooms, live three Mexican families, twelve people in all. A certain one-room house on San Antonio Street, with but one door and one window, accommodates a family of eight people. Between San Antonio and Nueces Streets there is a shanty composed of two rooms on the alley, facing the back of a store, which houses two families, nine people in all, five of whom are children. It is interesting to note that these two families make their living by washing clothes for white people, and the clothes are brought to these premises to be laundered.**

Between Second and Third Streets, San Antonio and Nueces Streets, is a plot of ground about one hundred and forty feet by two hundred feet, on which are located thirty houses, in which forty-eight families live. There are one hundred and eight children. The total number of people is two hundred and thirty-one. These houses rent, on an average, for \$7.00 per month each, or

*See Appendix, p. XVII.

**See Appendix, p. XVIII.

\$210 for the whole number, making the rent for the entire year amount to \$2520. I am told by prominent realty men of the city that the money invested for these houses and ground will not exceed \$3500.

Between Third and Fourth Streets, on San Antonio and Nueces Streets, the housing conditions are equally as bad. Along the alley which divides this block in two parts are twenty-four one and two-room shanties. They face a very dirty stable and horse lot, a large rock pile, and the back of a store. The lots on which these houses sit are fifty feet deep. Thirty-two families are huddled together in these tenements.*

On the block between Nueces and Rio Grande Streets, on Third and Fourth Streets, are a number of apartment houses, built around an inner court. The congestion here is not different from that just described. This section of the city is reached by the city water mains, though one hydrant often supplies several houses. There are no bath tubs in these shanties, nor is there any screening.

Children are forced to play in the dusty streets in front of saloons and houses of prostitution, as there is no yard space left for them. It is almost criminal for a city, in which there is supposed to be as much culture as in Austin, to allow children to be reared under such unsanitary, filthy, and immoral environment.**

A number of Mexican women wash for a living. Some families are able to live off the garbage picked from the trash boxes in the alleys of the section settled by the Americans, and from the dumps. A home industry which is very generally carried on is the making of candy and tamales. It does not seem believable that this city would permit candy and tamales to be made under such unsanitary surroundings to be sold, yet every day we pass the Mexican candy vendor selling his goods on the streets. On April 19, I counted seven Mexican candy vendors on Congress Avenue from Eleventh Street to Third Street. Three had their candy in a glass-covered box to protect it from the dust of the street. The amount of filth which would enter the candy from this source is small as compared with that already mixed into it at the very making. The Mexican population of this city is needed in our industries and public works, and they must be protected from such housing conditions. It is

*See Appendix, p. XVIII.

**See Appendix, p. XVI.

true that a national trait of the Mexicans is to live in shanties surrounded by rubbish and tin cans, but they are not entirely to blame. A majority cannot speak the English language when they first come to our city, so they are forced into this section for there is no other place for them.

CHAPTER VIII.

BILL-BOARDS.

LOCATION.

Bill-boards in Austin, as in all other cities, are erected in the most prominent places on the most often traveled streets. As is their purpose, they are read by everyone who passes that way. They stand out, as is intended for them, and in glaring type announce certain kinds of business. They force themselves upon the public and there is no way to escape their influence upon the public mind. Again, they are not different here from those of other cities, where they are still allowed to exist, in that, in most instances they both face and adjoin residence property. They detract from the general appearance of that particular section, and together they mar the beauty of the city. The most important are to be found along the bridge at the south end of Congress Avenue, the corner of First Street and Congress Avenue, on East Thirteenth Street, at the corners of Guadalupe and Nineteenth Streets, and Speedway and Nineteenth Street, and on both East and West Sixth Streets. In practically every case they are surrounded by residences.

CONSTRUCTION.

A majority of these bill-boards are constructed out of two by four timbers, covered with boxing or sheetiron, and fastened to posts which have been sunk slightly into the earth. They are often propped by runners from the board to stobs driven into the ground. Some are nailed to old fences. A very slight wind-storm from the proper direction would blow these down and scatter them into the streets or the yards of the residences close by, destroying property and endangering life. In case of fire many of these would serve as fire brands to spread the conflagration. During the San Francisco fire many lives were lost and property destroyed by burning bill-boards which were blown many blocks.

KIND OF RUBBISH BEHIND BILL-BOARDS.*

The danger from fire becomes more noticeable when we take into account the large amount of paper that is to be found lodged behind the bill-boards. Not only do we find many loads of dirty and moulding paper and rags collected here, but also dead chickens, rats, dogs, and cats. Some are killed and thrown behind these walls; others are poisoned and seek these places of shelter. Here they are hidden away from the eye of the drivers of trash wagons and are left to rot. But this is not the worst condition. Most of the bill-boards of Austin are used as public toilets. This is very dangerous to the health of the community. Flies breed and swarm in these places of filth, and with their bodies laden with such filth seek the kitchens of the residences close by. This is an important source of soil pollution. If ever these harbors of filth are removed and residences built on such sites, the soil in the front yard of the same will be so polluted that no one should dare allow his bare-footed child to play in his own front yard, because of the danger of contracting hookworm.

Bill-boards invariably lower the value of the surrounding property. In addition to the evil consequences before mentioned, they destroy the beauty of the city.

MORAL INFLUENCE IS BAD.

Again, bill-boards furnish hiding places for all kinds of criminality. The tramp sleeps on this pile of paper; the burglar hides from the officers of the law. The white slave trafficker finds these bill-boards shelters in the darkness of the night to tempt and perform his deeds. The pictures shown are very injurious to the morals of a community. The bill-board painter goes as far as he dares to show very obscene pictures. These catch the public eye. Also they attract the attention of growing boys and girls to no good results. Much of what is shown is meant to appeal to the baser sensual desires of the individual.

Of the one hundred and thirty-seven bill-boards I counted, only sixteen advertise business houses of Austin, as follows: Lumber companies, 2; insurance, 1; music houses, 4; drugs, 3; automobile companies, 6. Other advertising is as follows: Soap, 6; syrup, 4;

*See Appendix, p. XVII.

coco cola, 4; polish, 8; chewing gum, 18; shows, 33; whisky, 18; cigarettes and tobaccos, 30. The last four items cover 99 of the 137. Thus it is seen at a glance that bill-boards, which are the sources of much evil, have not sufficient value within themselves to justify their existence.

PART II

THE INADEQACY OF THE ORGANIZATION OF THE HEALTH DEPARTMENT AND PRESENT MUNICIPAL AND STATE LAWS FOR EFFECTING PROPER SANITARY AND HEALTH CONDITIONS

CHAPTER IX.

THE HEALTH DEPARTMENT AS NOW CONSTITUTED.

There is no such thing as an organized Health Department in Austin. We have health officials, and while their duties and functions should unite them into a Health Department, there is no unity of action or effort. Our scheme of health and sanitation supervision is as follows: (1) A Board of Health, a mere figure-head with no powers; (2) a City Physician, while a member of the Board of Health, in no way does he serve in conjunction with the Board of Health; (3) Assistant City Physician, who has charge of cases sent to the City Hospital; (4) City Bacteriologist and Inspector of Bakeries, Restaurants, Hotels, Stores, Ice Cream Factories, Soda Fountains and Rooming Houses. He is neither under the direction of the Board of Health or City Physician, nor are his reports made to either of them; (5) City Veterinarian and Inspector of Dairies, Milk Depots, Slaughter-houses, and Butcher Shops. As in the previous case, this inspector makes his reports only to the City Council, being completely without the supervision of either the City Physician or the Board of Health; (6) the Sanitary Inspector has charge of the municipal collection of trash and the location of dumps. He reports to the Council only. (7) The Plumbing Inspector works independently of the other health officers.

These health officials are nominated and selected by the City Council. As a matter of practice each is appointed by the Commissioner under whose department the officer works, and vote by the Council is merely formal sanction of the appointment. There is a kind of official comity or "hands-off policy" maintained by the members of the Council. Each feels that he had better vote for the nominations of the other so that his appointments will be

adopted without change. As a result, there is no investigation made by the Council of the qualifications of the nominee. Many ridiculous things have happened from this custom. For instance, the Council recently elected an "M. D.," the nominee of the Commissioner, as City Veterinarian and Inspector of Dairies and Slaughter-houses, and within one month discharged this employe, giving as a reason his lack of qualifications. The release of the inspector was due partially to the fact that two Commissioners were interested. He served as Inspector of Dairies and Slaughter-houses under the Police Commissioner and City Veterinarian under the Commissioner of Streets. The latter was not quite willing to have the mules, used by the street department, cared for by an "M. D." This is not given in any spirit of censure of anyone. I mention it to show that the system is wrong.

If the Council is to continue to select these officials, all should be under one department. But that would not suffice; the entire scheme of selection must be changed. The chapter on the Reorganization of the Health Department outlines these changes.*

The term of office of these officials is co-extensive with that of the Commissioners, i. e., two years. This prevents a continuous policy of inspection and health supervision. It places the selection of certain inspectors too nearly under the influence of those financially interested.

BOARD OF HEALTH.

The city ordinances provide for a Board of Health to be composed of the City Health Officer and four practicing physicians within the city, who are appointed by the Mayor. There is no provision for the time of meeting, nor for the calling of meetings. It is generally understood that the Board is to meet once each month, but as a matter of fact they do not meet more often than once in nine months. What is there for this Board to do? The ordinances would, upon first reading, seem to assign much power and many duties to it. But practically it has no power and meets only when called in an advisory capacity. A closer study of the ordinances will distinctly show they confer no power at all in the working out of the measure.

*See p. 76.

An ordinance passed June 2, 1910, sets out the powers and duties of the Board of Health, as follows:

Section 1. "That the Board of Health of the City of Austin shall have the power subject to the approval of the City Council, and it is hereby given the power, to prepare and promulgate and publish such rules and regulations providing for the proper keeping, production, barter, and sale of food stuffs sold and offered for sale within the corporate limits of the City of Austin, as to them may seem for the best interest of the public health of the City or Austin."

Sections 3, 4, and 5 require "milk vendors," "market men" and "persons conducting slaughter-houses" to secure a "permit and shall register as such with the City Board of Health."

Section 6 requires persons "who shall run a public eating house, hotel, restaurant, or boarding house where meals are served for a consideration, shall obtain from the City of Austin a permit."

Section 7 sets out the method of securing this permit. Persons wishing to engage in these particular lines of business "shall make application to the Board of Health for a certificate showing a compliance with the health rules and regulations prescribed by said Board, the evidence of which shall be the certificate of the inspector, showing a compliance with such rules and regulations." Upon securing such certificate "the Mayor shall grant to such applicant permission to pursue the occupation sought in such application."

Section assesses a penalty for the violation of this ordinance.

Section 1 seems to give them an important power, and it would if it were possible under the present arrangement of the Health Department to carry out these provisions. Two things unite to make it a dead letter. (1) The rules of health are subject to the approval of the Council; (2) the Board is not consulted by either the City Physician or the inspectors. Hence they do not know the exact needs of the city at any particular time. If the inspectors were required to make written reports to the Board weekly and the City Physician should outline each week the general health conditions of the city, then the Board would be more competent to pass rules for the best interest of the public health of the City of Austin, and these should not be subject to a less expert tribunal, the Council. Or else, the Council should feel that it is duty bound to approve these measures without question. But such is not the

case. Many measures which in the interest of public health have been promulgated by the Board of Health have been disproved by the City Council. The Council is forced to be responsive to the opinions of certain classes of voters; so if a measure will alienate a number of influential men whose business would be affected if the health measure was passed, it would be political suicide for the Commissioners to approve the Board of Health rules. Hence, they refuse to sanction it, though the health of the community demand it. It matters not who is on the Council, the result would be the same. The Council should select as a Board of Health physicians who rank with the best of the city, and give them complete power to formulate rules and measures for the best interest of the public health. These rules should have the same weight as ordinances.

Sections 3, 4, and 5 require the "milk vendors," "market men" and "persons conducting slaughter-houses" to register as such with the Board of Health." This is not done; and there is no way for the Board of Health to enforce such a measure, owing to the fact that Section 7 makes it possible for them to secure a permit without the consent of the Board of Health. The Mayor, and not the Board, issues the permit to do business upon the "compliance with the health rules and regulations prescribed" by the Board of Health. But what is the evidence of such compliance? An application passed on by the Board of Health in session? No. "The evidence which shall be the certificate of the inspector." This clause destroys the power of the Board of Health. The inspector never reports to the Board of Health that a permit has been issued nor does he consult them before he signs the application of the person deserving the permit. The inspectors should make a written report each week of each dairy and other concern inspected, and on this score card, kept by its secretary, the Board of Health should base its issuance of "permits to pursue the occupation sought in such application."

The Board of Health, immediately following the adoption of the commission form of government in Austin prepared many valuable rules for the public health, only a few of which were adopted. These may be found incorporated in the ordinances of June 2, 1910. But since that time no rules formulated by the Board of Health have been adopted. The Board, realizing it is nothing but a mere figurehead and that its suggestions will not be recognized,

has ceased to give much attention to the general health of the city.

The Board of Health rules* adopted by the Council June 2, 1910, cover the milk supply, slaughter-houses, meat markets, grocery stores, fruit stands and confectionaries, canning factories, candy factories, hotels, restaurants, boarding houses, sidewalks, stables and bakeries. The objection to these rules is that they are too general, but if the Health Department was sufficiently organized to enforce them properly the general health of the people of this city would be greatly improved. It is impossible to properly enforce this ordinance with only two inspectors to cover the entire food supply, more especially when these inspectors are required to give one-half of their time to this work.

The Board of Health has not published any health bulletins, nor is this a duty of the Board under the present ordinance. There is no record kept of the vital statistics of the city by the Board. This is the duty of the City Physician. Neither is there any kind of record kept of the sanitary conditions of the dairies, bakeries, butcher shops, slaughter-houses, or the general sanitation of the city, as these inspectors report only once a year and then to the City Council. No chart is kept showing the location of infected districts, nor is there an investigation of the source of epidemics made by the Board of Health. In other words, the Board has no data whatever on which to base a health bulletin save general rules of health and sanitation applicable to any city. But so keenly have the members of the Board of Health felt their lack of power and recognition they have not even published such a pamphlet as this. This is further prevented because no funds are appropriated by the Council to be used by the Board of Health in any way whatever, not even for the investigation of the source of contagious diseases.

THE CITY PHYSICIAN.

The City Health Physician is nominated by the Superintendent of Police and Public Safety and approved by the Council. He should be selected from a list of three selected by the Board of Health, for there is too great a temptation to pay a political debt by such appointment. The public health is too important a matter

*See Appendix, p. I.

to be exposed to the dangers of such a system. Under a properly organized Health Department the City Physician should be under the direction of the Board of Health, to whom all reports should be made, and not to the Superintendent of Police. He should be in accord with the Board of Health and have such scientific training that a body of this kind would recommend him to the Council.

The City Physician receives \$1200 each year for his services. This is insufficient. He cannot be expected to perform the various duties assigned to him on such a salary.

The chief duties of the City Physician are to attend charity cases outside of the hospital, to quarantine infected houses or districts, to call upon such cases, and to issue burial permits to undertakers. His work in this city is not so much the prevention of disease as it is administering aid to those already sick. He keeps a very incomplete record of the vital statistics of the city. According to his register the number of deaths from April 1, 1912, to April 1, 1913, was 671, while the number of births for the same period was 353. Throughout the whole State there is only one death to three births. The number of deaths is easily secured because of the law requiring the undertakers to file a death certificate signed by the attending physician, when he asks for a burial permit. But the physicians of the city are not careful to report births, even though they are required to do so by a State law. Until there is a complete registration of vital statistics little progress can be made in the prevention of disease in this city.

The City Physician is a member of the Board of Health, but the relation between him and the Board is merely nominal. Very rarely is the Board called upon to give advice and reports are made to the Council once each year.

The City Physician has no power to direct the work of the inspectors, nor do they ever report to him concerning the sanitation of the city or of the sources of food supply. Should the inspector know of a case of typhoid or scarlet fever among the handlers of milk or other foods, he would not report it to the City Physician nor would the latter report such to the inspector. This makes it extremely difficult to trace down the source of epidemics or to prevent their spreading.

During the summer of 1912 the City Physician published a small health bulletin showing the relation between the house fly

and typhoid fever. This is the only effort made to instruct the public in the great need of observing more sanitary methods of living. There has been no report showing the exact health conditions, the efforts being made to prevent disease and the results of these sanitary rules and measures.

ASSISTANT CITY HEALTH OFFICER.

The Assistant City Health Officer is nominated by the Superintendent of Police and elected by the Council. His term of office is co-extensive with that of the Commissioner. For his services he receives \$900 each year. His duties consist of attending the cases in the City Hospital. He is in no way under the direction of the City Physician or Board of Health, nor does he make any report to either.

CHAPTER X.

SCHEME FOR THE INSPECTION OF THE FOOD SUPPLY AND THE
SANITARY CONDITIONS.

Section 11 of the public health ordinance passed June 2, 1910, says: "That for the purpose of carrying out this ordinance, the City of Austin, upon the nomination of the Superintendent of the Department of Police and Public Safety, may appoint one or more food inspectors." In pursuance of this ordinance the Council has employed two inspectors, each of whom receives \$750 a year as a salary, and are presumed to give but half of their time to such work.

To one of these inspectors is assigned the duty of inspecting bakeries, grocery stores, hotels, restaurants, and rooming houses. Section 13 of the health ordinance of June 2, 1910, provides that, "the inspectors shall make at least quarterly an inspection and report in writing on the condition of the premises of each boarding house, hotel, restaurant, or place where meals are served for a consideration."

The Board of Health rules set out certain general rules to be observed by persons engaged in these occupations. These are not sufficiently explicit in any case, and particularly with regards to bakeries. The rules governing bakeries should go more into detail.* The very bad conditions of bakeries and grocery stores are not entirely due to the lack of a proper ordinance, but to the failure of enforcement of these ordinances. It is impossible for one man to inspect all these concerns as often as they should be when he is required to give but half of his time to the work.

The "report in writing" called for by the ordinance, should be made weekly instead of annually, and to the Board of Health instead of the Council.

Bakeries and grocery stores should be given a rating as in the case of dairies. This score should be based on the general cleanliness and the quality of the food handled. The inspector should visit the places of business at least once within two weeks. A complete record should be kept by the secretary of the Board of Health

*See changes in Board of Health Rules, p. 79.

and the rating of any bakery or grocery should be given any person asking for the same.

The other one of these two inspectors is assigned the duty of inspecting the milk supply, slaughter-houses and butcher shops. Section 12 of the health ordinance of June 2, 1910, stipulates, "That the inspector shall make an inspection of all dairies in the City of Austin of within five miles of the corporate limits of the City of Austin as often as may be directed by the Board of Health, and in any event he shall make not less than one in every three months. * * *" This provision is somewhat misleading. The Board of Health has never directed this officer to make any inspection whatever, because his reports are made once a year directly to the Council, who, by the way, do not understand it, and the Board of Health knows nothing of the conditions nor does the City Physician.*

To visit the thirty dairies which furnish milk to the people of Austin, the inspector must drive thirty-five miles. It requires an entire week to visit all at one time. This same inspector is charged with the duty of inspecting the slaughter-houses and the cattle which go through the stock yards. One must drive forty-five miles to make this round. But this is not all, he must inspect all the butcher shops of the city. And still he is required to give but one-half of his time to these duties. As City Veterinarian, he is required to see after the health of the horses of the street and fire departments.

This inspector is able to visit the dairies only once every three months. They should be inspected weekly and given a rating. The score card put out by the Department of Agriculture of the Federal Government should be used, and each dairy graded very carefully.

The city ordinances do not require the dairy herds to be given the tubercular test. There is a State law to that effect, but no effort is made by local authorities to enforce it.

The inspector has requested the Council to pass a number of rules, which should be followed by the dairymen, but none have been adopted. The proper plan would be for him to make his suggestions to the Board of Health. The policy adopted by the in-

*See Organization of Health Department, p. 77.

spector toward the dairymen has been one of instruction instead of prosecution. A number of dairymen have been influenced to remodel their buildings, screen the milk barns, and three have put in concrete floors. The time has come when instruction must be supplemented by prosecution if such is necessary to secure a pure milk supply.

The ordinance of June 2, 1910, was amended May 25, 1911, providing that "Said inspector shall also visit the slaughten-pens, slaughter-houses, meat markets, stables (public and private), and report any violation of the rules prescribed in this ordinance.

All slaughter-pens are required by ordinance to be without the city limits. This seems to be an exceedingly bad arrangement for two reasons. First, a slaughter-house to be sanitary must have sewer connections and a good water supply. It will be remembered that of the nine slaughter-houses only two have sewer connections. These two have private sewers emptying into the river. The deplorable condition of the others and the general soil pollution resulting therefrom is largely due to the lack of a sewer. But, even if all had private sewers running into the river, they would be objectionable themselves. The city would have little control over the character of material turned into the river and over the laying of the sewer pipe itself. It might be nothing less than a large scheme for the pollution of soil at each connection in the sewer pipe. The anti-pollution of streams bill would prohibit this within three years and the expense would be lost.

In the second place, this has put the slaughter-houses so far out from the stock yards and so far apart, it becomes impracticable to inspect them as often as they should be, and absolutely impossible to inspect the cattle before they are killed. There is no opportunity for any reasonable number of inspectors for a city of this size to protect, in any measure, the public from diseased and filthy meats so long as the present arrangement is carried out. Before a piece of meat leaves the packing house in Fort Worth or Kansas City it must be passed by no less than fifteen United States inspectors.

It is impossible for the inspector to watch the conditions under which meat is hauled from the slaughter-house to the butcher shop. I have seen these wagons loaded with fresh meat which was prac-

tically uncovered. The dirty, blood-soaked covers had blown back and the carcasses were covered with flies.

The inspector says there is no need of trying to prosecute the proprietor of these wagons, as it is impossible to get a conviction. He also tells this story. He found six wagons so bad that, as he said, the owners should have been criminally prosecuted. He asked the city attorney to file complaints against these for hauling meat in such unsanitary, filthy wagons. The attorney asked the inspector for his witnesses, stating that the owners would swear the wagons were sanitary, and hence no chance for conviction under existing conditions. The inspector was told that he must have another witness before a complaint would be filed.

The Sanitary Inspector is nominated by the Superintendent of Receipts and Disbursements and approved by the Council. For his services he receives \$1000 a year. His duties are outlined in Articles 652 and 654 of the Revised Ordinances of the City of Austin. He is more properly the superintendent of the drivers of dump wagons—a layman who inspects the premises mainly for the purpose of collecting trash. It is impossible for him to make a complete inspection and enforce the provisions of the health code because the field is so large.

His reports are made to the Council and not to the Board of Health or City Physician. The lack of co-operation on the part of the health officials is shown by the method of inspection of the premises recently made by the police department. During the meningitis scare two special inspectors were employed to inspect the premises of the residences throughout the city. These inspectors forced many people to remove the compost from the horse lots. This was hauled away in carts by negroes and scattered from the lot to the dumps. No reports were made to either the Sanitary Inspector or the Board of Health. This did some temporary good, but the weight of their efforts is lost to the future use in the promotion of health and sanitation.

The Sanitary Inspector does not enforce a number of city ordinances regarding public sanitation. This is due to two reasons, first, the fact that he is given twice as much work as he can properly do and he is not directed by the proper body, that is, the Board of Health.

Title XXIX, Chapter IV, Article 669, of the City Ordinances,

makes it "unlawful for any person within the corporate limits of the City of Austin to permit a cistern * * * on his premises, unless the same is screened with wire netting with meshes thereof closely enough woven to prevent mosquitoes or other insects of that size from leaving said vessel of water, * * * and any person, firm or corporation violating the provisions hereof shall be deemed guilty of a misdemeanor, and, upon conviction, shall be fined not less than \$5.00 nor more than \$100." But this is a dead letter; there is no attempt at enforcing it.

Again, the ordinance of June 2, 1913, provides that "All stables or places where horses, mules or cows are kept, sheltered or maintained, must be kept clean, and in a sanitary condition. The manure must be collected daily and placed in a closed or screened receptacle until removed." The inspector does not attempt to enforce the observation of these provisions.

The duties of the Plumbing Inspector are well outlined in Title XXVII of the City Ordinances. The chief faults in the work of this inspector are the fact that he does not enforce the law and he makes his reports to the wrong department. He is appointed by the Superintendent of Police and is paid \$1000 each year. He should be appointed by the Board of Health and make weekly reports to this Board.

PART III

SUGGESTED CHANGES FOR THE IMPROVEMENT OF THE SANITARY AND HEALTH CONDITIONS

CHAPTER XI.

THE HEALTH DEPARTMENT.

THE REORGANIZATION OF THE HEALTH DEPARTMENT.

People living in a city of the size of Austin have a right to demand an inspected food supply. The general health of the entire public requires a complete inspection of both foods and the general sanitation of the city. A partial inspection often harms more than it does good. Such is the case in Austin at the present time. Upon the adoption of the commission form of government in this city, there was also inaugurated a small scheme of inspection. The results were so noticeable immediately that the people have been made to believe that their food supply is absolutely pure because the city was inspecting it. There is no justification for such belief. And herein lies the danger of an incomplete inspection, because the people accept the goods without inquiry, and further, they cannot quickly grasp the need of spending more money in the inauguration of a more complete inspection of food supply and the general sanitation of the city. They become hopelessly indifferent. The conditions described in the first part of this thesis are convincing evidences of the need of a change, and that immediately.

In the first place, some plan must be adopted whereby there is secured a unity of action on the part of the health officials, and second, the employment of more inspectors. To these two things, as has been shown in Part II of this thesis, is due the great failure of our present system of inspection. The work of securing a sanitary and healthy condition in a city cannot be divided. It must be under one management; all reporting to the same head and that committee or board, analyzing the data secured, directs the work of the inspectors, as well as formulating and enforcing certain

rules of sanitation and health. This can be secured in our city only by a complete reorganization of the Health Department.

Following is a suggested scheme of organization of this department:

1. A Board of Health composed of the Mayor of the city, the City Physician, and five practicing physicians of high standing in the city. The Board shall have all the powers ascribed to it in the present ordinances and such other powers as are outlined later on. It shall meet weekly to hear reports of inspectors and formulate health rules.

2. There shall be a secretary of this Board, who shall keep a complete registration of vital statistics, also a map showing the location of contagious diseases and unsanitary premises, the score cards for the dairies and butcher shops, and collect data for the publication of monthly health bulletins. He shall be selected by the Board of Health, and for his services he shall receive \$1000 each year. The chairman of the Board shall be selected by the Board from among the five practicing physicians.

3. The City Health Officer shall be selected by the Council from a list of three prepared by the five practicing physicians on the Board. By reason of his being City Physician he becomes, *ex-officio*, a member of the Board of Health. He shall make a written report to the Board of Health at the regular weekly meetings of the general health conditions of the city and recommendations for the improvement of health. He shall receive \$2400 a year as salary.

4. It is very essential to an efficient health department that there is a well qualified and adequately paid bacteriologist and chemist whose time is wholly given to the problems arising in this department, and who shall have adequate laboratory equipment to be of real service in the solution of such problems. He should be paid not less than \$2000 per annum, and only the best man obtainable at this salary, or a larger one, should be appointed. He should be appointed by the Board of Health after full investigation of the merits of available men. The greatest care should be taken in this selection in order to secure a really competently trained man who has had ample experience in such work.

The bacteriologist and chemist should be given every opportunity to advise the Health Officer and the Board of Health, daily if

necessary, and he should have a seat at the meetings of the Board of Health and should be looked upon as one of the most important of the city's officials.

5. There shall be two Sanitary Inspectors, who shall be appointed, and for lack of efficiency, discharged by the Board of Health. These inspectors shall make a written report to the Board at the regular weekly meetings. They shall have no power to make dumps or fills on public or private property without the consent of the Board. They shall work in conjunction with the City Bacteriologist. For their services they shall each receive \$1200 a year.

6. A Plumbing Inspector shall be appointed by the Board of Health to serve during good behavior and efficiency. In addition to the duties now assigned by the statutes, he shall make a written report to the Board of Health weekly. His salary shall be \$1200 per year.

7. Two inspectors of dairies shall be selected by the Board of Health to serve during good behavior and as long as efficient, the Board alone having power to discharge. These inspectors shall visit each dairy twice a week and grade the dairy according to the official score card issued by the United States Department of Agriculture.* These score cards must be sent along with a written report to the Board each week. These score cards shall be kept by the secretary of the Board, and any person may by calling the secretary obtain the exact grade of the dairy from which he is buying milk or cream. These inspectors shall receive applications for business permits, but they must be passed on by the Board of Health before the Mayor signs the permits. The Board of Health shall cancel this permit if the reports of the inspectors show a failure to comply with the Board of Health rules. These shall supply weekly the City Bacteriologist with samples of milk from each dairy.

8. An inspector of meats and butcher shops shall be appointed by the Board of Health. He shall remain at the city abattoir, save when inspecting butcher shops, to inspect all cattle before they are butchered and also the carcasses before they are delivered to the markets. He shall be paid \$1200 each year. He shall work in conjunction with the City Bacteriologist.

*See Appendix, p. XIX.

9. The Board shall appoint one inspector of bakeries, stores, restaurants, and boarding houses. He shall give his entire time to the work and receive \$1200 each year as a salary. He shall make written report to the Board each week.

10. The Board of Health shall publish a monthly health bulletin.*

CHANGES IN THE BOARD OF HEALTH RULES.

The rules set out by the Board of Health for the handling of milk are good, but they are too general. They should be strengthened by adding certain detailed rules for the dairymen to follow:

1. All milk barns and milk houses must have concrete floors.
2. Milk barns must be swept and washed out daily.
3. All milk barns and milk houses must be well screened.
4. The manure from the cow lot and barn should be piled, screened and hauled away to be burned or buried once each week.
5. (a) All herds must be given the tuberculin test every twelve months.
(b) No cow shall be added to the herd unless first tested and a health certificate furnished by the City Veterinarian (or inspector)
(c) No cow shall be sold without furnishing a health certificate.
(d) All animals found to be diseased must be turned over to the city inspector. He shall have the cow killed, and if the meat is suitable for food the owner shall be paid for the net proceeds. If not, the carcass must be cremated.
6. The City Veterinarian, alone, shall make the tests and issue health certificates.
7. The city shall charge a reasonable amount for giving each herd the tuberculin test.
8. All milk wagons shall be washed out with warm water each day.
9. The drivers shall wear clean clothes.
10. The crates shall be sterilized.

*See Monthly Health Bulletin, published by the Health Department at Asheville, N. C., given in Appendix, p. I.

11. All milk cans and bottles shall be sterilized with steam, and put upon a clean rack to drain, away from dust and flies.
12. All milk must be delivered in the vessel or bottle in which it is carried.
13. No can, bottle, or other milk container shall be opened in the milk wagon.
14. (a) All bottling and filling cans must be done in the milk house at the farm or at the milk depot.
(b) There shall be a fine of not less than \$50 nor more than \$150 for the violation of this rule.
15. All cases of contagious diseases among milk handlers or their families shall be reported at once to the Board of Health.
16. (a) The cow's legs and flanks and udders must be washed before she is turned into the milk yard.
(b) The cow's udders must be wiped off with a clean, dry cloth before she is milked.

In addition to the Board of Health rules now in writing though often unenforced, rules should be adopted requiring (1) all meat to be slaughtered at the municipal abattoir; (2) no carcass, sausage, bacon, or meats of any kind shall be hung in the market without the refrigerator; (3) lard must not be rendered in open kettle in the back yard of the market.

Grocery stores must (1) screen all meats; (2) keep the covers on lard and pickle buckets and barrels; (3) all fruit must be kept within the store and under no condition shall it be set on the sidewalk without; (4) all eggs must be candled before they are delivered.

All manure from stables, public and private, must be collected daily in screened boxes and removed once a week, and either incinerated or hauled without the city limits.

Bakeries must be (1) entirely separated from living quarters; (2) all wagons in which bread is delivered must be closed with tight fitting doors in both front and back; (3) the drivers of wagons must keep clean in person and clothing and shall wear clean white cloth gloves; (4) all bread crumbs must be swept from the wagon daily; (5) bakeries shall be maintained only in suitable buildings.

The Board of Health rules should be extended so as to include

suitable rules of housing, especially regulating the number of people who may live in one house.

Closed garbage cans (1) should be required at both the homes and business houses; (2) these should be constructed in a certain specified way, and (3) should be washed and oiled three times a week; (4) garbage must not be collected less often than three times each week; (5) it should be made a misdemeanor to throw garbage into trash boxes.

Bill-boards should be carefully inspected and the provisions of the ordinance proposed on page 87 rigidly enforced.

CHAPTER XII.

NEXT STEPS IN MUNICIPAL HOUSEKEEPING IN AUSTIN.

The first step by way of improvement in the sanitary and health conditions of this city should be the immediate reorganization of the Health Department as outlined above. This is extremely important because there is no hope for an efficient administration of our present health code under the present disjointed system. This scheme is no more expensive than it should be for a city of this size, not taking into account the deplorable conditions as we have found them, and the following table gives the yearly salary of each officer and the total amount under the proposed system:

Registration of vital statistics and secretary of Board of	
Health	\$ 1,000 00
City Physician.....	2,400 00
City Bacteriologist and Chemist.....	2,400 00
Two sanitary inspectors, \$1200 each.....	2,400 00
One Plumbing Inspector.....	1,200 00
Two Inspectors of Dairies, \$1200 each.....	2,400 00
One Meat Inspector (if abattoir is built).....	1,200 00
One Inspector of Bakeries, Stores and Restaurants....	1,200 00
<hr/>	
Total	\$13,800 00

Asheville, N. C., with a population of only 18,762, expends annually \$25,000 for this service.

This would give Austin four inspectors of foods. San Antonio has twenty-four. An extra sanitary inspector is added, which will be necessary when the city begins to collect garbage, and that should be at once. The Board of Health is given a secretary to record the reports made by the inspectors, keep score cards, and act as registrar of vital statistics.

A municipal abattoir is the only solution of the meat question. The waste from the slaughter-houses alone would pay a large per cent of the running expense and at the same time remedy a great evil—the disposition of offal. It will be remembered one of the nine slaughter-houses around Austin only one cooked the offals; five fed them to the hogs, a practice which is against the laws of the

State; three threw the offals out into the fields to rot or to be eaten by buzzards. The following conditions demand an abattoir:

1. Inadequacy and unfitness of the slaughter-houses.
2. Difficulty of inspection.
 - (a) Slaughter-house.
 - (b) Cattle.
 - (c) Meat.
 - (d) Markets.
3. The disposition of waste.
4. The methods of handling meat from slaughter-house to market.
5. The necessity of hanging carcasses in the markets, unprotected from flies and dust.
6. The meat could be cooled under sanitary conditions.
7. Would be cheaper on market man.
8. Would pay the city a good revenue.
9. Would not cost over \$35,000 for construction.

The general condition of the city dumps, the nature of the material thrown there, the practice by certain classes of digging out the garbage, both from the dump and the trash boxes in the alleys, pollution of the soil by the burial of dead animals, show the absolute necessity for the immediate installation of a large incinerary plant. This is also made necessary by the method of handling garbage in this city. If we hope to prevent the recurrence of typhoid epidemics, and like diseases which are spread by the house fly, there must be municipal collection of garbage. This garbage could be destroyed by a large amount of paper waste which is being collected already, and the by-product could be sold at a good price as fertilizer. A plant which will incinerate all the waste, garbage, and rubbish can be installed for \$12,000.

Another step in civic betterment is the adoption of modern, up-to-date health, plumbing, and housing codes. The public health code, which may be found in Title XXIX of the Revised Ordinances of 1908, is in no way suited to present needs; the amendments passed June 2, 1910, are too general. The plumbing code, Title XXVII, of the Revised Ordinances of 1908, needs revising.

Title XXIX, public health code, Chapters VI and VII, declare

it to be a misdemeanor to refuse to place any building or premises in a sanitary condition as prescribed by the City Physician or the Council. Among other things, a comprehensive housing code should include provisions regulating: (1) The size of the lot; (2) the size and construction of the house; (3) location with reference to industries, saloons, and immoral resorts; (4) the lot and alley grade; (5) the prohibition of congestion; (6) the general sanitation of the premises; (7) yard space; (8) maximum rental rate.

Austin is paying heavily because of her bad housing conditions. She has received much damaging advertising by permitting these conditions to exist. This city is destined to be a place of homes. It should and will become the Mecca for cultured people, a place where men, having made a success in business in smaller towns, are wont to make their residence. The best advertising the Austin Chamber of Commerce can do is to see that the housing conditions are improved at once. It is not right for a few men who chance to own this property to get rich by exorbitant rates, when their property damages the whole city from every viewpoint, including the business of the city. It is folly to defend the housing condition in Austin.

The Mexican and negro population are important factors in the commercial life of this city; they could not be dispensed with. Then why should we allow them to live under certain conditions which continually destroy their mental, moral, and physical efficiency? They are citizens and have an inherent right to decent conditions of living. They help generally to support the government. Also, they are voters, help select our and their rulers, lawmakers, and judges, and they should. Their vote is a distinct factor in municipal politics, and one sought diligently by every candidate for office. What kind of citizens can be expected to come from people who, from early childhood, have been huddled together into squalid shanties surrounded by filth, disease, and immorality?

To the bad housing conditions of this city are due the greater amount of crime and poverty. Seventy-five per cent of the names on the corporation court record will be found to live under bad housing conditions. This is quite reasonable, for immorality always follows congestion. The secretary of the United Charities tells me that 90 per cent of those helped by that association come

from sections of the city where the housing conditions are the worst. Not only do these places breed poverty, but they make the administration of the charity department a mere dispensary of food and clothing. The charities can do little constructive work; there is no way of removing causes as long as the persons helped remain in these unsanitary places. The point of attack now is to move the person assisted out of these districts, away from this environment, so the children will escape during their early life these degrading influences.

These shacks must be razed to the ground and the erection of such buildings prohibited by a modern housing code. These people must be moved to a better environment and taught how to live. It is true that certain criminaloids, who own this property and reap an enormous per cent income on it will object. The same owners hold honored positions in both church and society; wear their diamonds and ride in expensive touring cars off of the money they squeeze from these poor people. Such an owner is not criticised by his church, and the people in the city who fight the church and its influence sanction his business. As a result, he walks our streets a highly respected citizen.

The property between Congress Avenue and Rio Grande Street, and the river and Fourth Street is aptly suited for manufacturing establishments. The streets should be opened to railroad trackage with suitable regulations, and the whole exempt from city taxes. Austin would then have something worth while to offer manufacturing enterprises, and would find it much easier to locate them in this city.

This would be an excellent place for the city abattoir. It would be close in and within easy reach of the city markets, would be easily inspected by the city inspectors, and would be connected with the city sewer and city water.

Thus the property owners would not necessarily lose anything by the change. To be sure, their property would be enhanced in value. Public health and decency demand that this be done. An enlightened public opinion will force such action.

Vice should be stamped out absolutely. Prostitution as a protection of the virtue of others is a superb fallacy. But if houses of prostitution are going to be permitted to exist, the Council should set aside a certain territory as a reservation somewhere away

from both the residence and the business sections of the city, where all prostitutes should be required to go. This should be well lighted, policed, and put under strict rules: (1) In the first place, the saloons must be divorced from the houses of prostitution; (2) all dancing should be prohibited; (3) music of a certain sort should be prohibited; (4) the general health conditions and sanitation of the premises should be carefully observed by the City Board of Health; (5) all owners of property in this district should be required to pay a special tax on the property; (6) the "lock hospital" plan should be instituted to care for the diseased inmates and to safeguard others against infection.

The shacks along Waller Creek should be moved back or torn down for one block on each side, the creek cleaned out, a gravel driveway put on either side, and parked from Twenty-seventh Street to the river. This is the only solution of the housing question along its bank. The bed of the creek divides the blocks into two parts, neither of which is deep enough for a residence lot. We may expect nothing but shacks to be erected here. At the same time, it would furnish the east side with a much needed park. The children at Bickler school and the high school would be given a beautiful playground, and they would not be forced longer to breathe the foul air from this indescribable deposit of filth. This would connect with the river front park the city is planning and give a continuous chain of parks and drives from the Country Club to the dam. Very few cities have such an endowment by nature, and Austin should hasten to take advantage of it.

Title XXXCI, Chapter VI, Articles 919 and 922 of the city ordinances, codified in 1908, regulate the erection of bill-boards and assign penalties for the violation of these rules. Article 919 says: "It shall also be unlawful for any person, firm, or corporation to place or cause to be placed in any street, alley, or sidewalk of the City of Austin any posters or advertising matter in the form of paper bills or advertisements, or to place the same in any street or alley in the City of Austin in such a manner or in such a way that the same is liable to become loose and blow about the streets or alleys of the City of Austin." Article 922 reads: "It shall be unlawful for any person, firm or corporation to place any sign, placard, notice, bulletin board, or advertising device of any nature or kind whatsoever, upon or against any pole erected, used, or

maintained in any street in the City of Austin for the support of any telegraph, telephone, or electric lighe wire or wires." These ordinances are too general. They leave it to the opinion of the person erecting the bill-board as to whether it is liable to become loose. The result is the constant violation of the ordinances. Furthermore, these provisions cover but a portion of the field in which bill-boards should be regulated.

An ordinance should be passed requiring every bill-board in the city to be torn down, and making it a misdemeanor for the erection of any in the future. They are not needed from a commercial standpoint, for the daily papers will more fully reach the public. They mar the beauty of the city, lower the value of surrounding property, are a fire menace, are injurious to the public health, and are detrimental to the morals of a community.

But if they are to be continued, they must be strictly regulated. I would suggest that ordinances be passed covering the following points. I do not claim that these provisions will be sufficient, but if adopted they will improve the existing conditions.

1. An ordinance requiring persons or corporations wishing to erect bill-boards to first get a permit from both the sanitary and fire inspectors, naming the place, manner of construction, and the nature of the advertisement.

2. An ordinance specifying the manner of construction and the material used.*

3. An ordinance requiring persons or corporations owning bill-boards to collect the trash and refuse from behind these boards as often as twice each week, and to place it in closed containers where it can be easily reached by the city trash wagons.

4. An ordinance providing for a board of censors, composed of the Mayor and two ministers appointed by the Council, who shall pass upon all pictures and signs before they are posted.

5. An ordinance requiring all persons or corporations owning such bill-boards to pay a special tax.

6. An ordinance requiring the secretary of the Board of Health to keep a record of the time and place of erection of each bill-board within the city.

No sanitary survey of this city would be complete without some

*No billboard should be erected where the bottom plank is less than three feet above the ground.

mention of the dust menace. Neither time nor space will permit anything beyond a cursory statement of some of the very bad results of this nuisance. The streets of Austin are in a deplorable condition. Something should be done immediately to abate the dust. It is coming to be recognized that in proportion to the population, there are in Austin more people who have colds, more people suffering from hay fever, more cases of nose and throat trouble than in any other city in Texas. According to the statement of one of the best authorities in the city, this is directly due to the dust nuisance. Also filthy street dust is blown into our kitchens, where a part is certain to get into the food. A prominent physician of the city says there is more sickness which is the direct result of the dusty streets than any other one cause. A member of the University Faculty, and one who is an authority in this matter, says, that "a number of men and women leave the University each year suffering with nasal and throat troubles which were directly caused by the dust nuisance here in Austin." It is not at all complimentary to the citizenship of this city that the students who attend the University have been permitted to spend one million dollars annually in Austin and the city has done practically nothing in reciprocation. The streets must be paved. The homestead law prevents the city from doing the work and taxing the cost as a lien against the property. However, a sufficient public sentiment should be aroused that all owners will want to pave the sidewalk and street in front of their property. A man who has the money to pay for paving and does not, has no right to live in a city. A person who has not the money with which to pave should sell to someone who has.

This is not proposed as a complete survey of the sanitary conditions under which we live in Austin, but rather an effort to awaken interest in certain deep-seated social needs. In the name of the common welfare I have sought to challenge the joint efforts of the men, the mothers, and the physicians to put an end to dirty milk, tubercular cows, unsterilized milk cans and bottles, filthy and diseased meats, the open garbage can, the dumps and other fly breeding places. I have endeavored to arouse all persons interested in the social life of this community to the great need of a modern housing code. I have tried to visualize needs, but not to censure persons. I have sought to point out existing social ailments, and

in an humble way to describe remedies. If these efforts shall in some small way better the civic life of this community my purpose will be accomplished.

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APPENDIX.

EXCERPTS FROM THE MONTHLY BULLETIN OF THE HEALTH DEPARTMENT OF ASHEVILLE, N. C., APRIL, 1913.

A MIXTURE OF FLIES AND MILK.

The subject matter of this bulletin is "A Mixture of Flies and Milk." That is the way they were served a few years back. They are not served that way in any intelligent community any more, nor by intelligent people; intelligent people prefer to drink the milk without the flies in it. In fact, since they have learned the filthy habits of the fly, and that it is the filthiest of all animals, large or small, they prefer not to eat the flies at all. We hope that this bulletin will sufficiently impress those who read it that it will not be necessary to serve a mixture of this kind again.

THE ONLY SENSIBLE THING TO DO WITH FLIES IS NOT TO HAVE
THEM—KILL THEM BEFORE THEY ARE BORN.

Destroy their breeding places, the horse manure, likewise all kinds of filth, including garbage from the kitchen. Have your stable floor of impervious material, keep the floor thoroughly cleaned of all manure daily or oftener, place the manure in wagon bed or box or bin with high floor and tight three sides and remove it without the city once a week or oftener. This is the law in Asheville.

If you have refused or neglected to obey the law and our inspector hasn't caught you at it and you have flies, then the following from the press service of the State Board of Health is good advice:

"Don't waste your time swatting flies this summer unless you have your house well screened. Fly swatters are a refinement to be used only in houses or rooms where all the doors and windows are screened. Fly swatters are merely a finishing process—a matter of refinement, if you please—to be used in a well screened room or house where there are perhaps never over a dozen flies. By means of fly swatters you can lay low the last fly in a room, but if the room is not well screened you might as well blow against the wind as to try to keep all the flies out by swatting.

"The first thing to do, therefore, is to put up fly screens. Don't

put it off another week or another month. Do it now, and get the benefit of screens all spring, summer and fall. Screens do not need to be expensive to be effective. In fact, in many instances a window can be screened perfectly with mosquito netting for 15 cents, while a 35-cent ill-fitting extension screen will let the flies come in by the hundreds.

"For kitchen windows, where it is rarely necessary to open or close the shutters, there is no better way of screening than by means of mosquito netting tacked to the outside of the window frame. Mosquito netting will usually last an entire season, and it does not interfere in the least with raising or lowering the windows, or with the inside shade or blinds. Of course, if you have the money, there is no objection to getting made-to-order screens to fit all the windows, but they will cost from \$1.00 to \$1.50 apiece, against 15 cents for the mosquito netting."

WAR AGAINST THE FLY.

The following editorial from the Asheville Daily Citizen of March 30, 1913, is so good, and covers the ground so thoroughly, that we take pleasure in reproducing it here:

"War has been declared, and this time it is against the common enemy, no other than humanity's inveterate foe, 'musca domestica.' There is a world of satisfaction in the knowledge that Asheville was the first city in the United States to begin the systematic extermination of this domestic pest. We recall that when the campaign opened some years ago, many were disposed to look upon it as a joke, and even to this day there are those who do not regard seriously the steps being taken in various sections of the country to exterminate the common house fly.

"Scientific research has conclusively proven that the house fly is one of the most deadly enemies of mankind, disseminating disease and pestilence wherever he goes. Various interests have vainly endeavored to establish a defense for the winged menace, but there has never been a valid reason offered why the fly should not be ruthlessly slaughtered on sight. Every man's hand should be raised against him; every door should be closed in his face, for he seeks not your life, but your death.

"The ravages of the house fly, however, can be materially les-

sened without resorting to bloody methods, or incurring the risk of censure at the hands of any humane society by indulging in wholesale murder. His tribe can be materially decreased by the systematic and painstaking extermination of his advance guard in the early days of spring. The use of the 'swatter' is effective enough in its way in the summer time, but that labor can be spared by steadily reducing the number of places where flies are likely to breed. Take, for instance, stables and barns where by the exercise of early precautions fly-breeding becomes impossible. In the homes, too, a careful disposition of all refuse, and the maintenance of cleanly conditions in back yards go far to decrease the tribe of *musca domestica*. Let our slogan be, 'less flies in the spring and less work in the summer.' "

SWAT THE FLY BEFORE HE GETS WINGS.

Paris green used in the same watery solution that has proved so effective in the control of potato bugs (1 pound to 25 gallons of water), is equally effective on stable manure as a maggot killer. A common garden watering pot full of water, a teaspoonful of Paris green stirred in, used on the fresh manure, which is the fly's favorite place for laying her eggs, and the flies from that stable don't need swatting.

Paris green used in this weak solution is not dangerous to stock as they would have to eat large quantities of the bedding to be affected, and every maggot killed is one less fly to dodge next week. Paris green does not injure the fertilizing qualities of the manure, but in a negative way increases it.

THE GOOD CITIZEN'S DECALOGUE.

I. Remember thy garbage can to keep it covered; lest thy garbage become a stench in the nostrils of the people, and breed flies.

II. Thou shalt cut the weeds in thy vacant lot, lest it become a hiding place for old tin cans, which catch rain water and breeds mosquitoes, papers and divers sorts of trash.

III. Thou shalt bear witness against thy neighbor's rubbish heap, likewise his dirty back yard. (The Asheville Health Department never tells the name of informant.)

IV. Thou shalt clean out the habitation of thy horse and thy cow frequently, lest the stable fly flourisheth and spread infantile paralysis, and the house fly breed by the thousands and millions and annoy thee and thy beast and produce much sickness in thy family.

V. Thou shalt prevent the breeding of the fly in the spring-time, that thy children unto the third and fourth generation need not swat him later.

VI. Remember thy back yard and alley to keep them clean. Six days shalt thou labor to keep thy premises clean, and if yet the task is not accomplished, thou couldst do worse than continue on the seventh.

VII. Thou shalt covet all the air and sunshine thou canst obtain.

VIII. Lood not upon the milk when it cometh from an unclean dairy; for the doctor will not hold thee guiltless if thy infant sickeneth therefrom and die.

IX. Remember thy cleaning up day and keep it wholly. (Every day is cleaning up day in Asheville.)

If thou dost hearken unto these sayings, to do them, thou shalt live long in the land.

CERTIFIED MILK FOR ASHEVILLE.

We take much pleasure in announcing to the public that the Biltmore Dairy began the delivery of certified milk in the city of Asheville on the 15th of this month. Someone may be interested to know what certified milk means, who certifies it, and is it of superior value, and if so, in what way?

First—Who certifies to it, and in what way?

The Medical Milk Commission of the Buncombe County Medical Society. The Buncombe County Medical Society first in every good word and work when it comes to health matters in Asheville, and many other things for that matter, appointed the commission from its members according to the rules of the American Association of the Medical Milk Commissions, and it might be proper to state that a Medical Milk Commission cannot be appointed in any other way and that this commission is the only legally constituted authority that can legally authorize the use of the words

"Certified Milk" in connection with the production and distribution of milk..

In a general way we might say that "Certified Milk" means the cleanest of clean milk. The cows must be healthy, they must be tuberculin tested and shown thereby to be free from tuberculosis. They must not be allowed to associate with any other cows, either in the barn or pasture, nor will the certified herd be allowed to run in a pasture or paddocks where other cows have recently been. The cow barn must come up to specified standards as regards light, ventilation, ability to be kept clean, such as concrete floors, gutters, etc., and must be screened to keep out the flies, then the barn must be kept clean according to specifications. All other animals, such as horses, dogs, cats, fowls, etc., must be kept away from the certified herd and the barn where the certified herd is kept. The cows must be kept clean, the hair on the udders, flank and tail must be kept clipped and the udders must be washed according to approved methods before milking is begun.

The milkers must first be examined by our medical inspector and likewise their families to see whether or not they are afflicted with any disease, and this examination is repeated every week. If any of the milkmen or any of the members of their families are found to have any disease they are stopped from milking. The milkers must not use tobacco or liquors while on duty. They are not allowed to spit while they are on duty. No person other than milkers shall go in the barn during milking. They must put on white sterilized overalls or gowns when they begin milking. They shall wash and scrub their hands as does the surgeon before beginning an operation, immediately before they begin milking.

Utensils.—The bottles, milk cans, milk pails and everything used in handling the milk must not only be washed thoroughly, but must be sterilized before receiving any milk.

THE MILK.

When the milk is drawn from the cow it must be immediately cooled to 45 degrees Fahrenheit, and kept between 35 and 45 degrees until it is delivered to the customer. It must show a butter fat, that is, cream, of $4\frac{1}{2}$ per cent, and the bacterial count must not be over ten thousand.

Records of all the weekly examinations and tests made by the

veterinarian, medical inspector, chemist and bacteriologist are kept on file in the office of the secretary of the Commission and copies are furnished the American Association of Medical Milk Commissions, which alone makes the rules and regulations under which "Certified Milk" is produced and distributed. The local Commission has become a member of this national association and will send a delegate to the next meeting, which takes place in Minneapolis next June.

THE SEVEN AGES OF MILK.

Dr. Charles Cristardo, of Point Loma, Cal., in an article on "Certified or Clarified Pasteurized Milk," in the December Dietetic and Hygienic Gazette, describes the sanitary history of milk production in the following popularly impressive way:

"1. Neglect Age.—Meaning anything and everything unsanitary; filthy stables and as filthy cows; dust, flies, unclean cans and pails and unclean milkers perhaps, using unclean milking methods, and careless cooling and storing of the milk.

"2. Water Age.—When 25 per cent to 50 per cent of water was added to the milk to make it hold out.

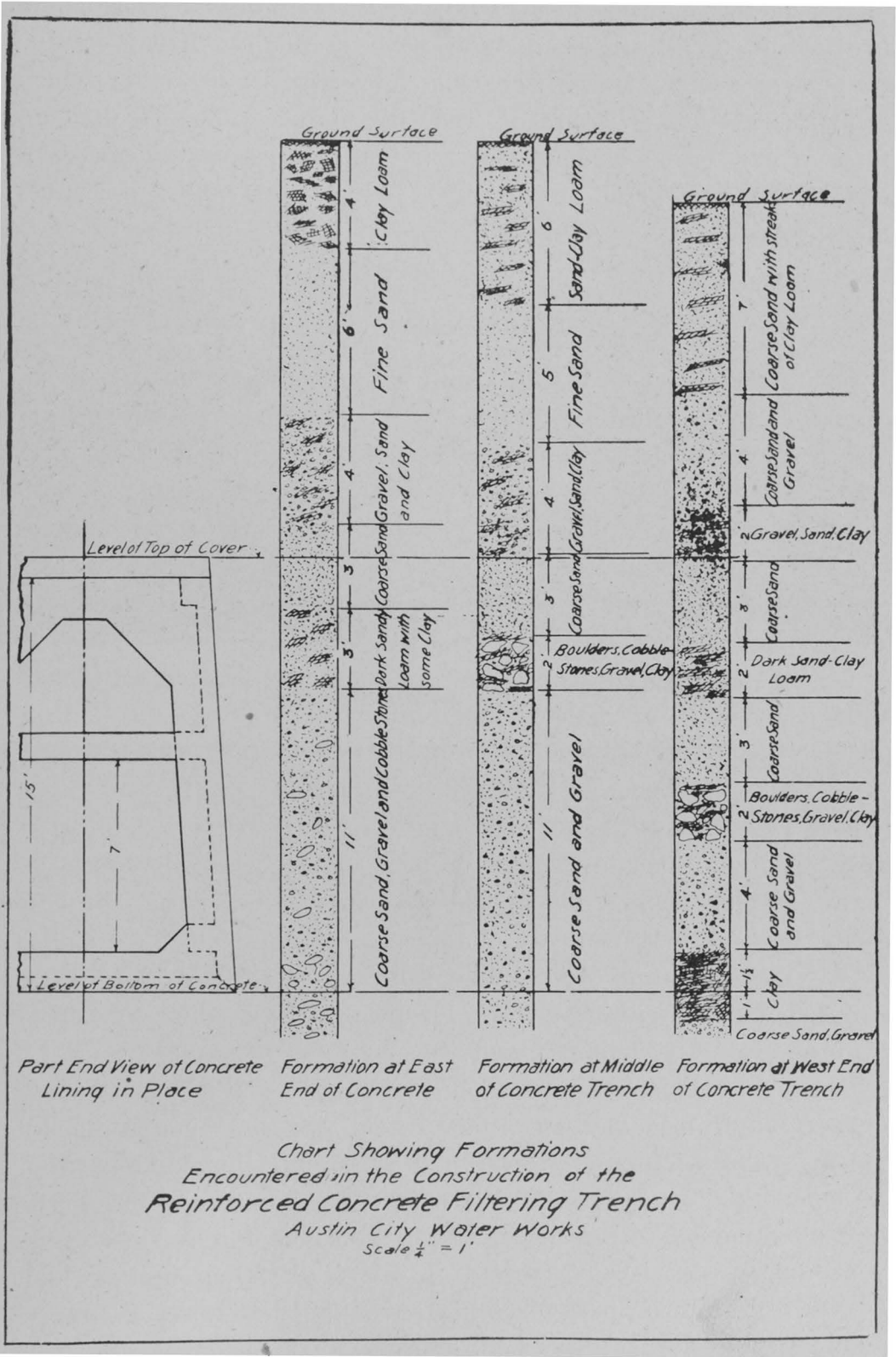
"3. Skim Age.—When all or part of the cream was skimmed and kept at the farm, and the milk sent to town.

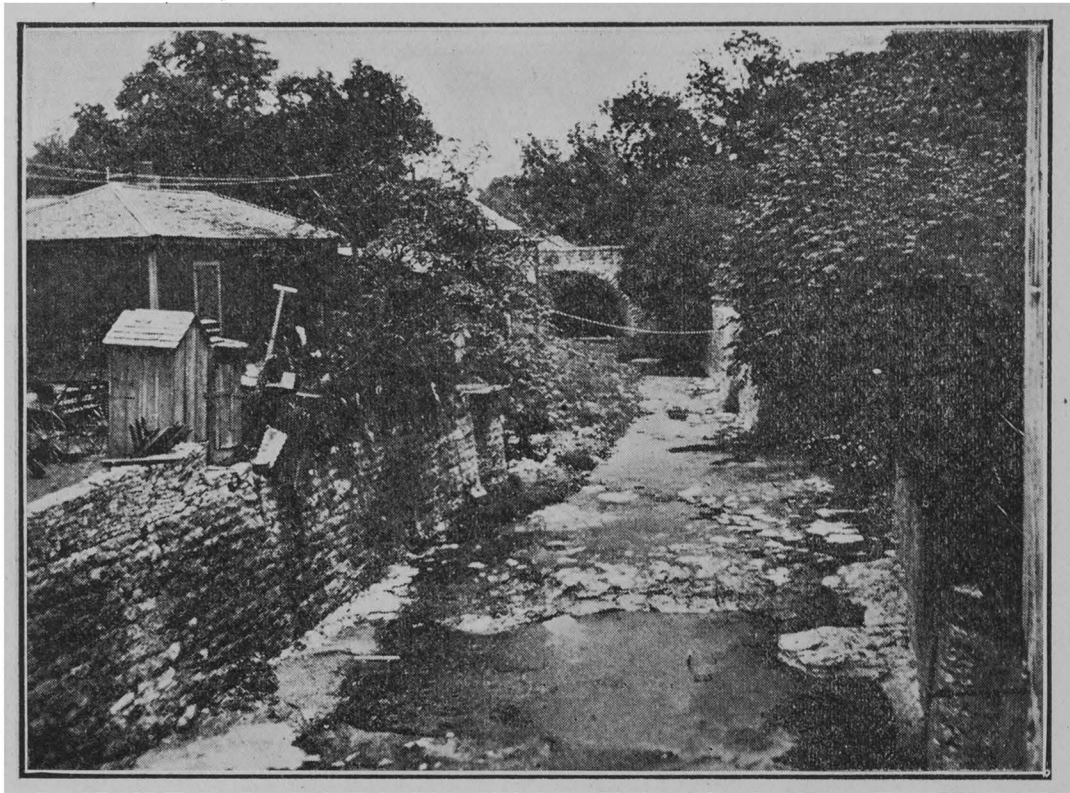
"4. Preservative Age.—When salicylic and boracic acid were used, and then formaldehyde to keep the milk chemically sweet.

"5. Tuberculosis Age.—When milk was found to be, through bovine bacillus, a transmitter of the white plague.

"6. Pasteurization Age.—When all 'uncertain' milk was made safe through application of heat, 145 degrees Fahrenheit for thirty minutes, correctly, honestly and thoroughly done.

"7. Golden Age.—When all milk shall be 'certified' in the full and sanitary sense and meaning of the term as to environment and methods, machine clarification to take place immediately after the milking, when the milk is fresh from the cow and before germ multiplication has commenced, either from the foreign matter or from the slimes already present in the milk; then cooling and bottling at the farm, pasteurizing after bottling, to make assurance doubly sure."

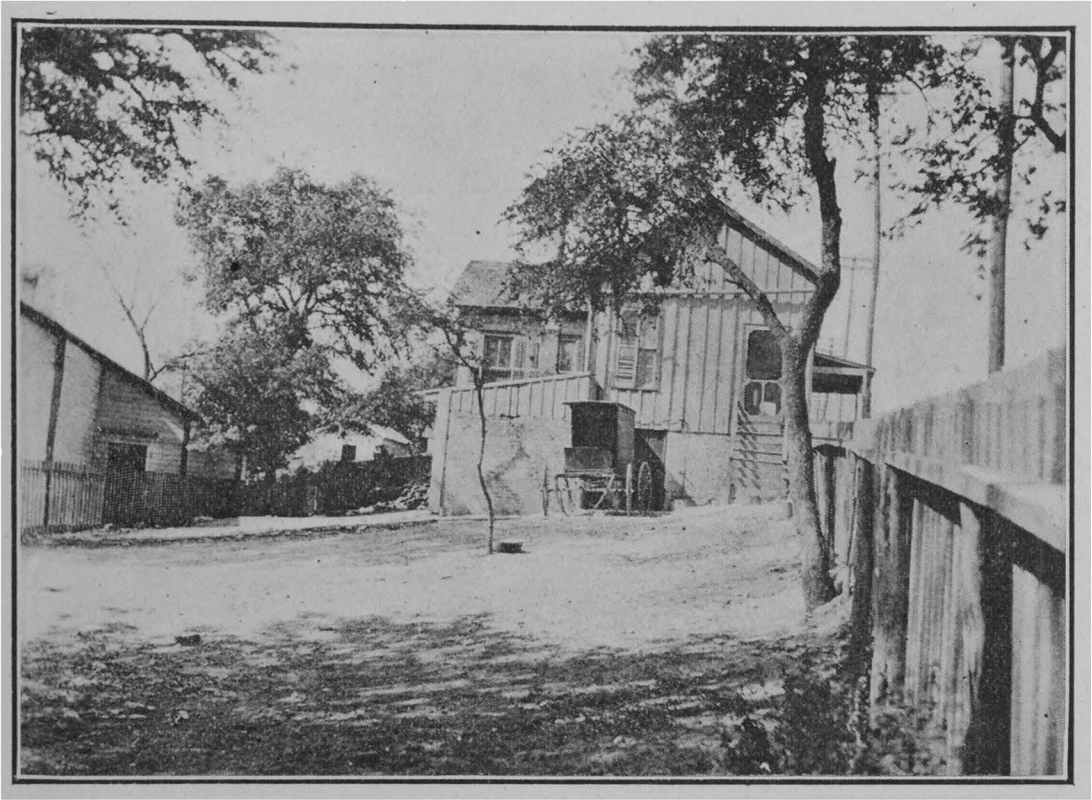




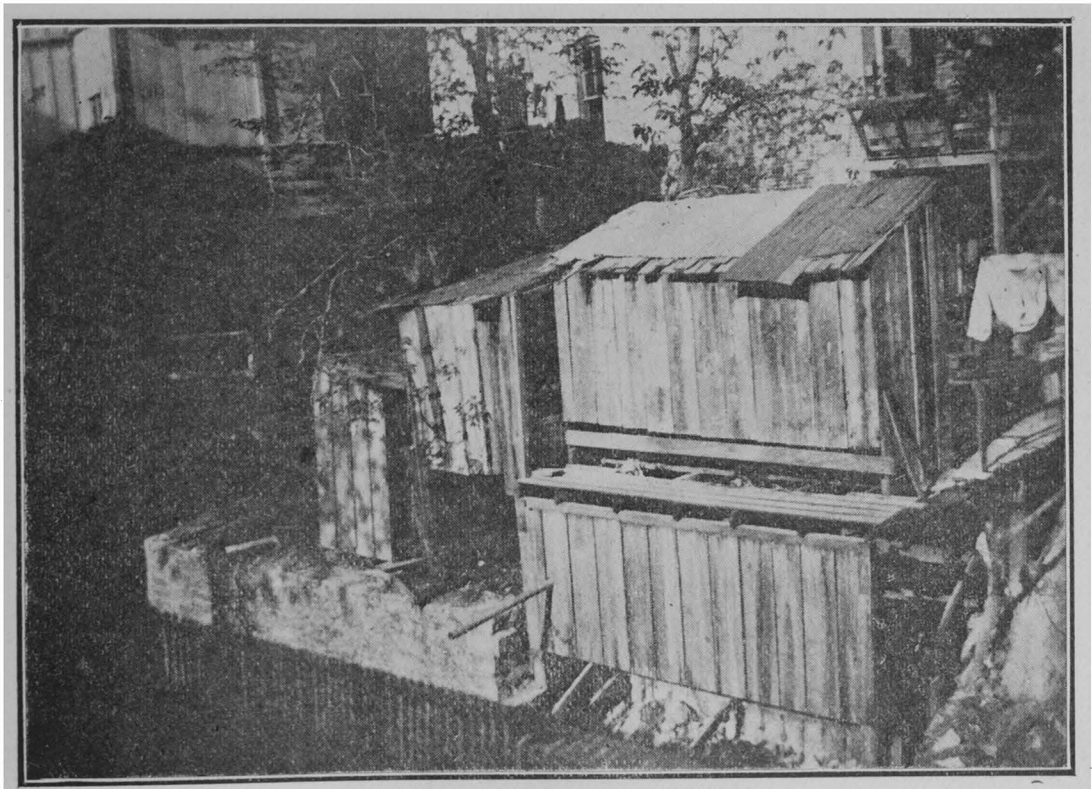
Waller Creek (Characteristic View.)



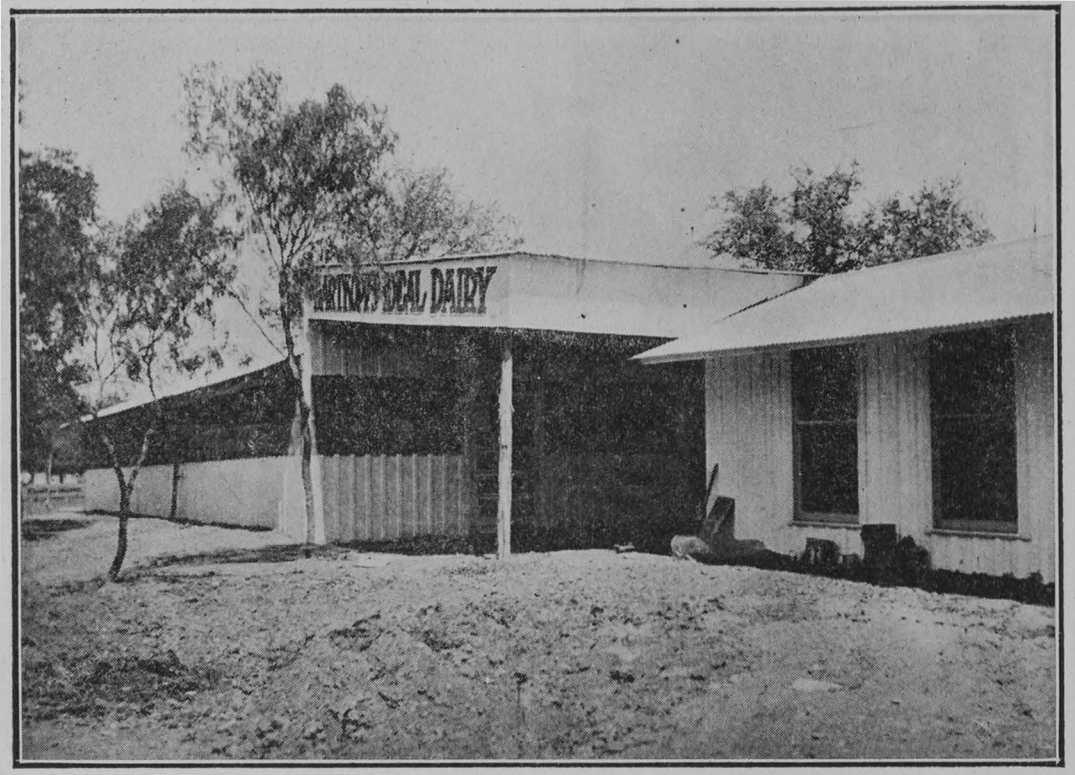
A Part of City Dump along the River Front.



There is a Bakery in Basement of this Residence. The foul air from Waller Creek has free access into the mixing room.



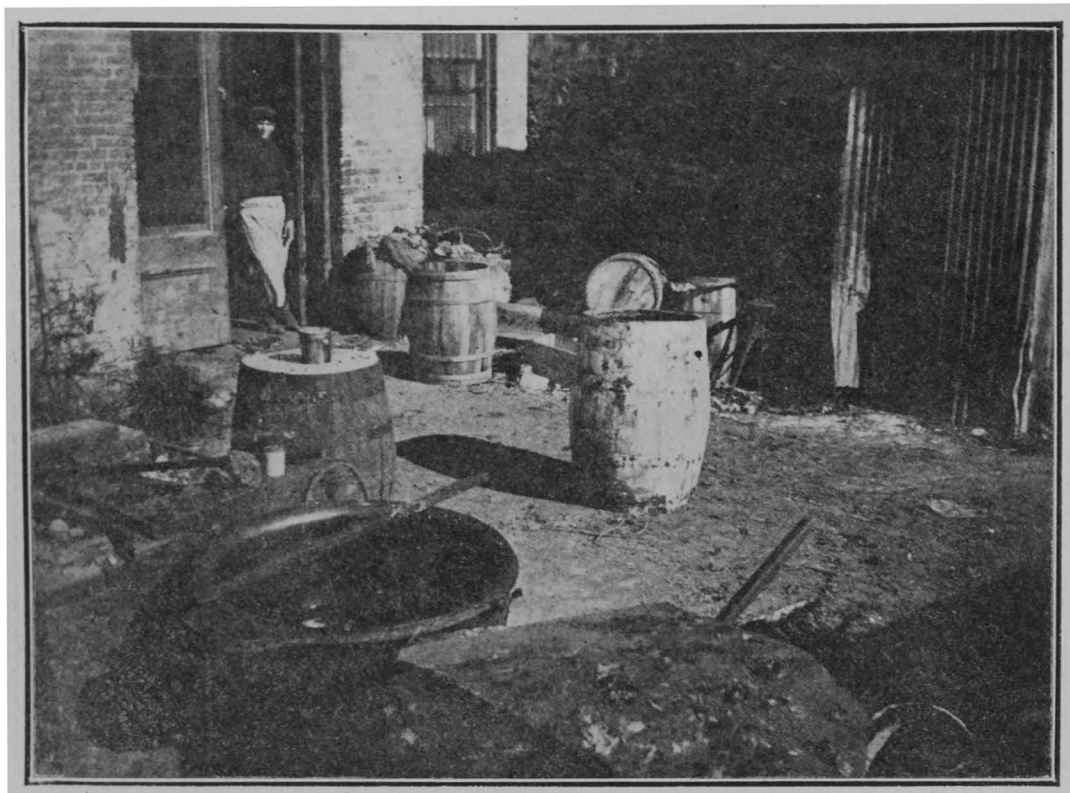
Dry Closets on Bank of Waller Creek. Attention is called to drain pipes which empty into creek.



One of the New Milk Barns



Garbage Box in Business Section.



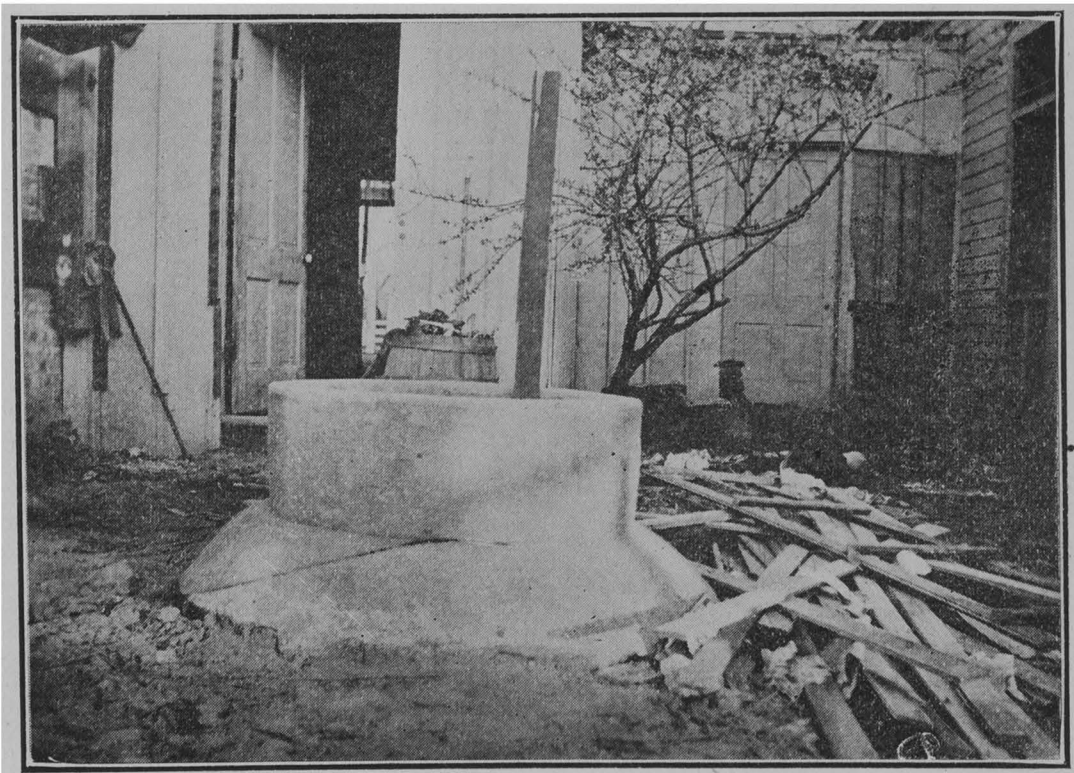
In the Back Yard of a Butcher Shop. Attention is called to the Open Kettles, also, to the Barrels of Trash and Bones just to the right of door.



These Garbage and Trash Barrels are next door to a Boarding House.



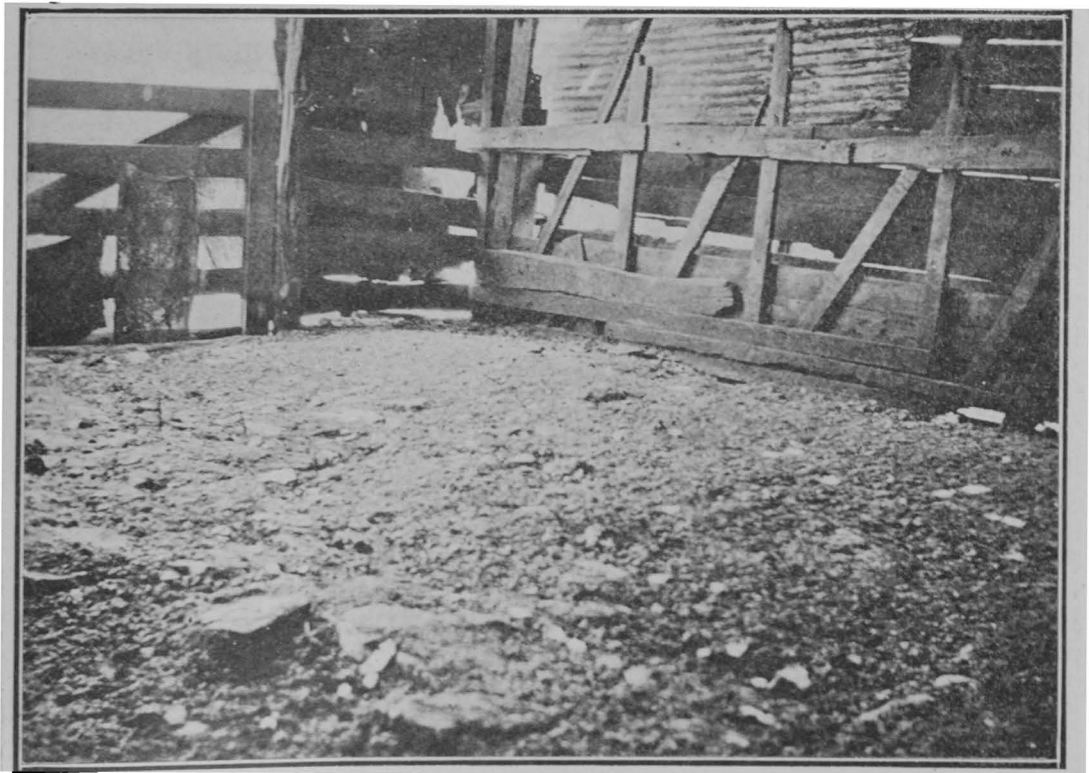
A City Dump Cart over loaded with Manure. On the way to the River Frònt Dump.



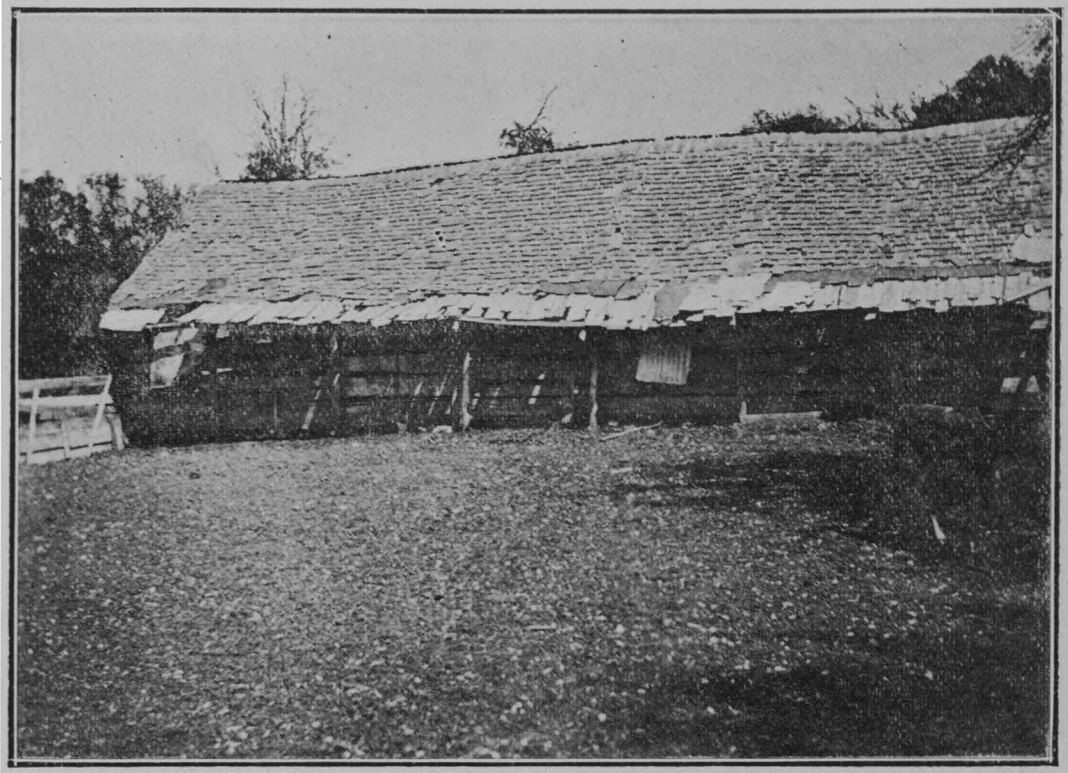
Unscreened and Unused Cistern near back door of a Bakery. Attention is also called to the Trash Barrel.



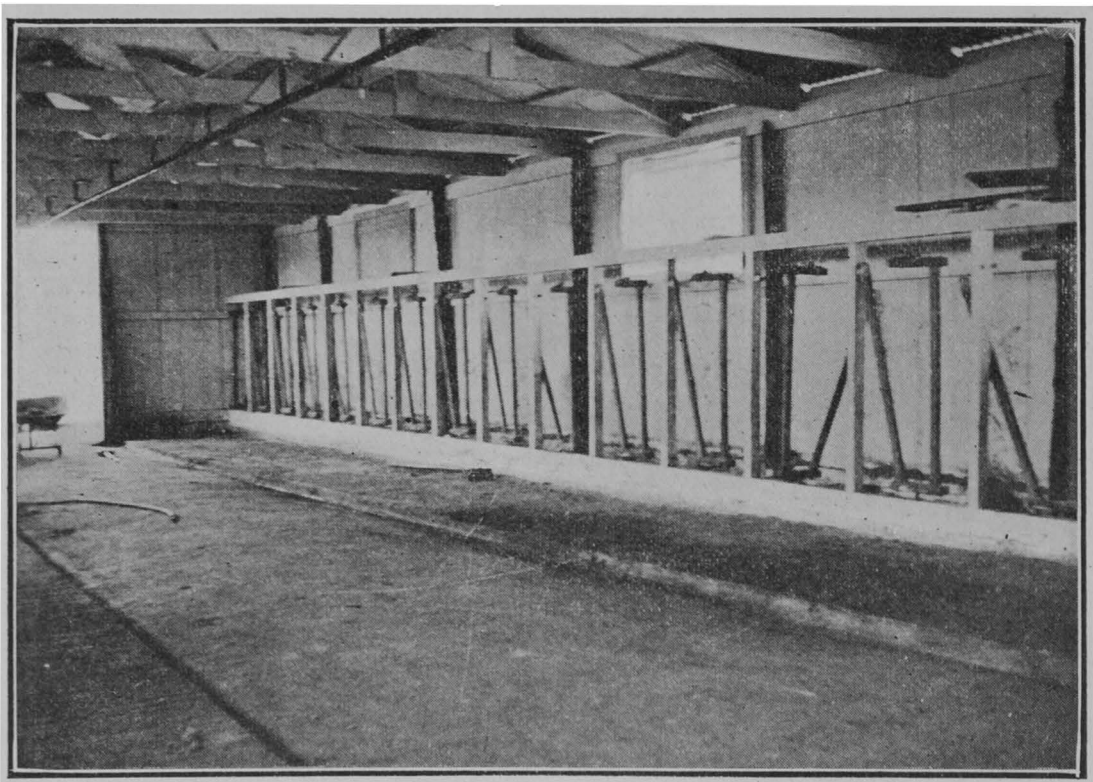
A Private Wagon used in Hauling Manure from Private Premises.



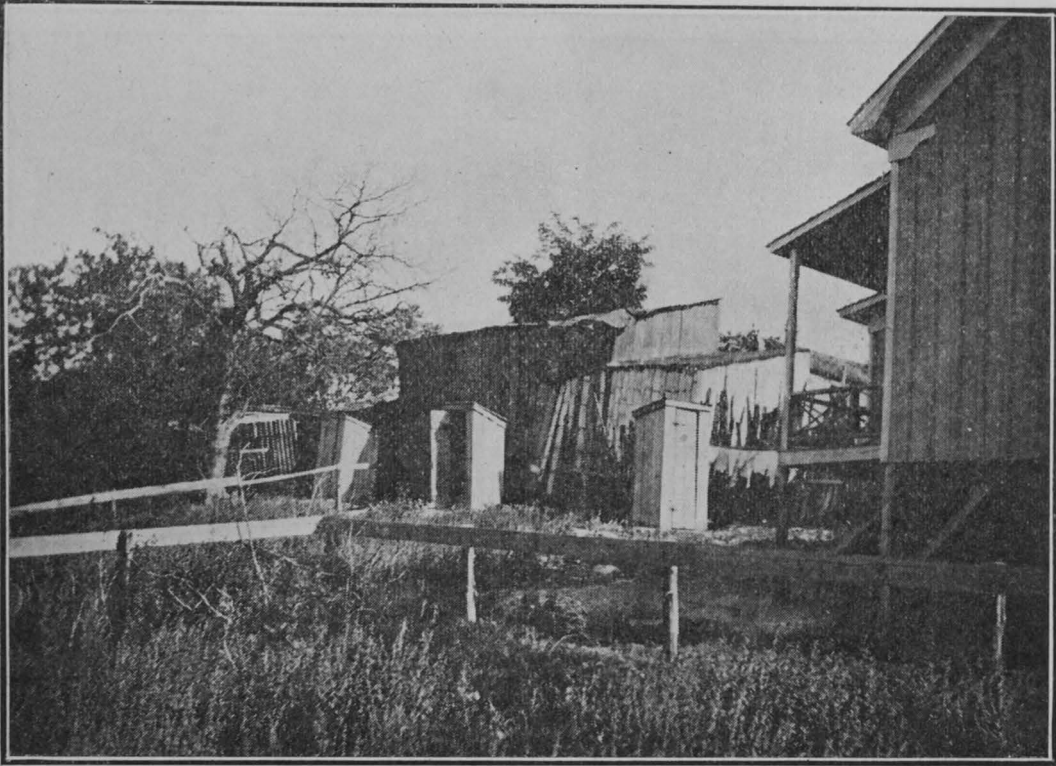
Interior of Old Barn. Attention is called to the Dirty Floor.



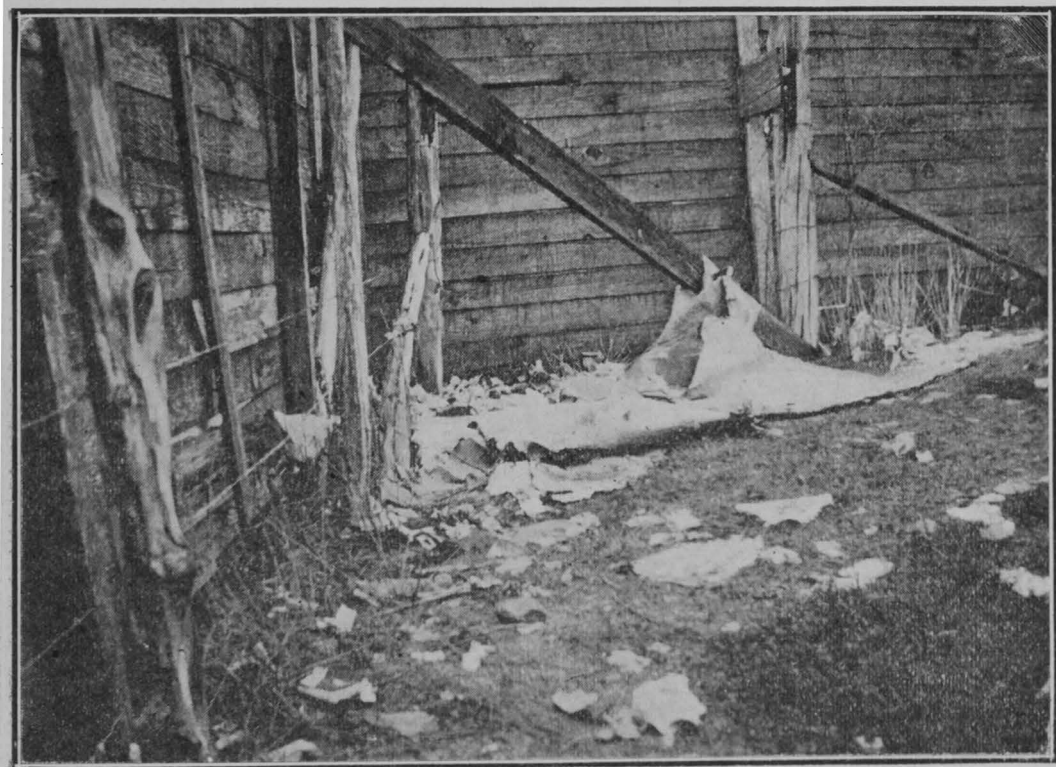
This Barn was replaced by the one below. It well represents a majority of the Dairy Barns now in use.



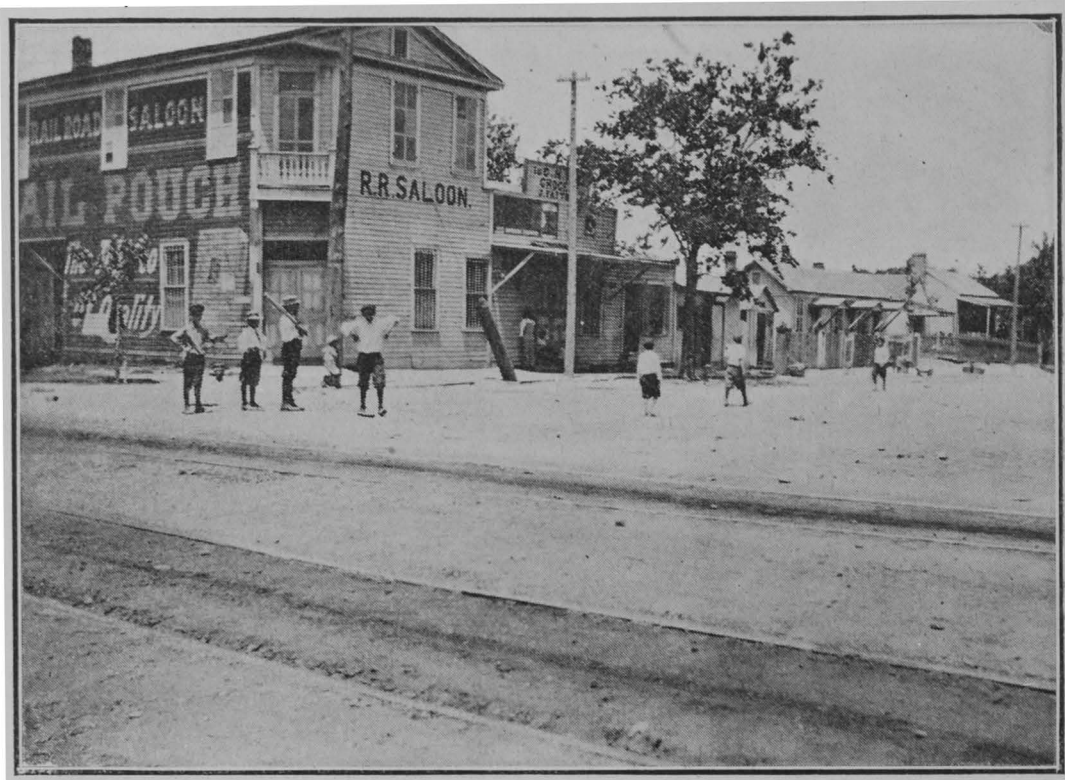
Interior of New Barn.



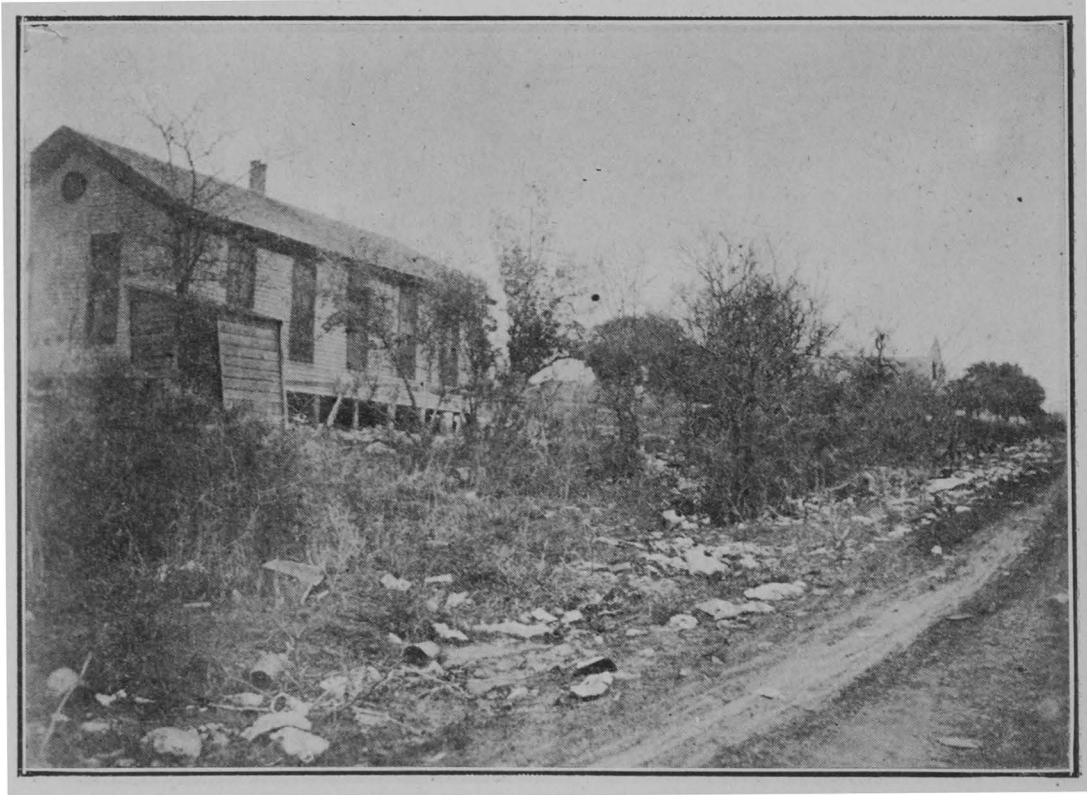
Open closets line the alleys. Attention is also called to the weeds.



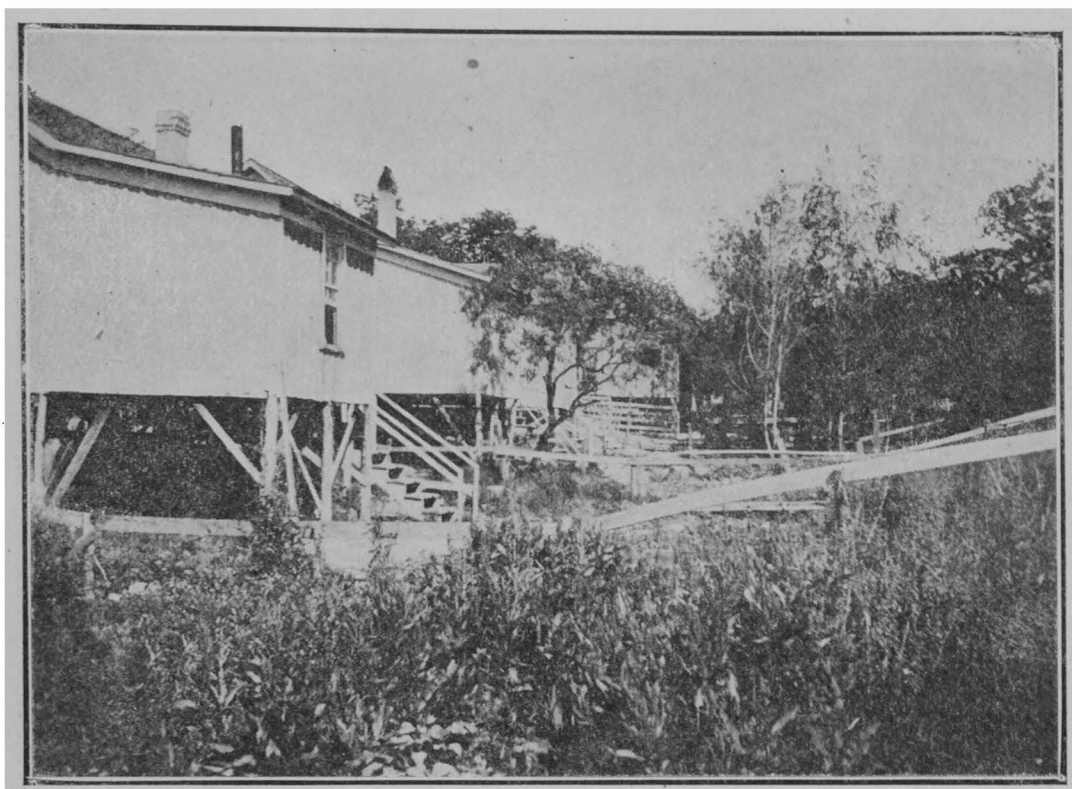
Behind the bill-board.



Mexican Children must find a Play-ground in the streets in front of saloons and other resorts.



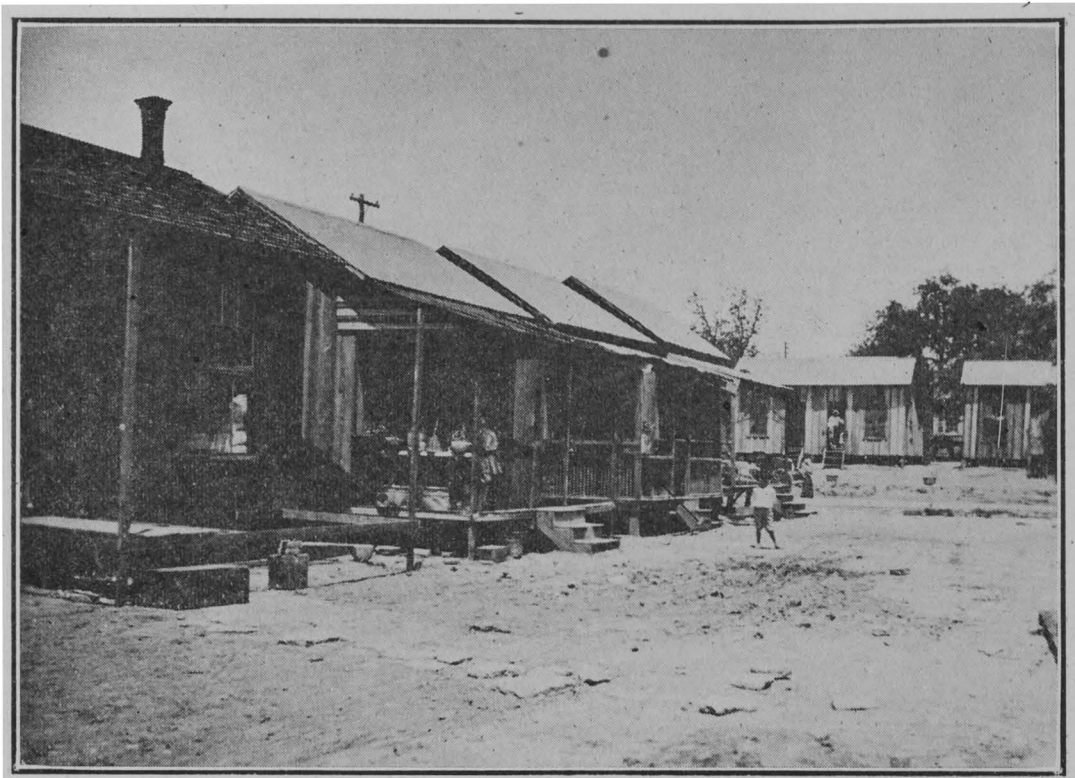
Negro School House on West Twenty-fifth street. Attention is called to Open Closet and Filthy Drain on south side of Building.



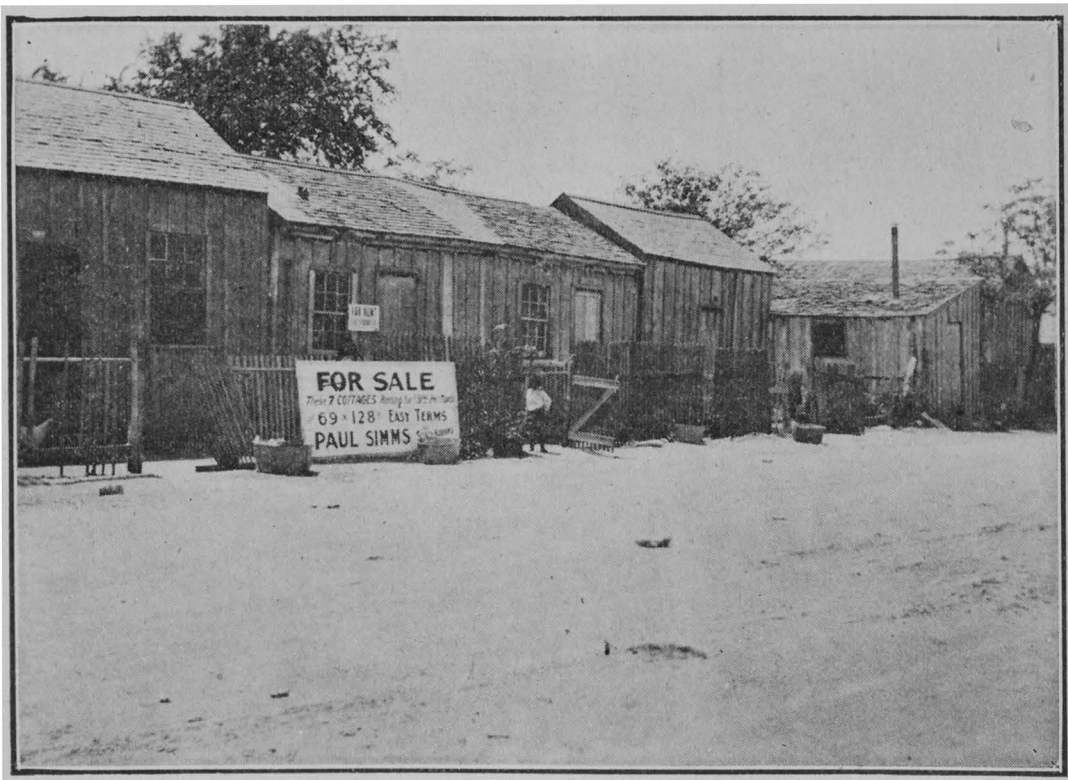
Negro Houses built out over Filthy Draw Attention is called to the weeds. There have been two cases of typhoid in the second house during past ten months.



Mexican shanties near Dump.



Four of the Twenty-four Mexican shanties facing an Alley.



Mexican shanties. Notice the sign board says there are *seven* cottages on a plot of ground only 69x128 ft.

EQUIPMENT.	SCORE.		METHODS.	SCORE.	
	Perfect.	Allowed.		Perfect.	Allowed.
COWS.			COWS.		
Health.....	6	.....	Cleanliness of cows.....	8	.....
Apparently in good health.....	1		(Free from coarse dirt, 6.)		
If tested with tuberculin within					
a year and no tuberculosis is					
found, or if tested within six					
months and all reacting animals					
removed.....	5				
(If tested within a year and react-					
ing animals are found and re-					
moved, 2.)					
Food (clean and wholesome).....	2	.....		
Water.....	2	.....		
Clean and fresh.....	1				
Convenient and abundant.....	1				
STABLES.			STABLES.		
Location of stable.....	2	.....	Cleanliness of stables.....	6	.....
Well drained.....	1		Floor.....	2	
Free from contaminating surround-			Walls.....	1	
ings.....	1		Ceiling and ledges.....	1	
Construction of stable.....	4	.....	Mangers and partitions.....	1	
Tight, sound floor and proper			Windows.....	1	
gutter.....	2		Stable air at milking time.....	6	.....
Smooth, tight walls and ceiling....	1		Freedom from dust.....	3	
Proper stall, tie, and manger.....	1		Freedom from odors.....	2	
Provision for light: Four sq. ft. of			Cleanliness of bedding.....	1	
glass per cow.....	4	.....	Barnyard.....	2	.....
(Three sq. ft., 3; 2 sq. ft., 2; 1 sq.			Clean.....	1	
ft., 1. Deduct for uneven distribu-			Well drained.....	1	
tion.)			Removal of manure daily to field or		
Bedding.....	1	.....	proper pit.....	2	.....
Ventilation.....	7	.....	(To 50 feet from stable, 1.)		
Provision for fresh air, control-					
lable flue system.....	3				
(Windows hinged at bottom,					
1.50; sliding windows, 1; other					
openings, 0.50.)					
Cubic feet of space per cow, 500					
ft.....	3				
(Less than 500 ft., 2; less than					
400 ft., 1; less than 300 ft., 0.)					
Provision for controlling temper-					
ature.....	1				
UTENSILS.			MILK ROOM OR MILK HOUSE.		
Construction and condition of uten-			Cleanliness of milk room.....	3	.....
sils.....	1	.....		
Water for cleaning.....	1	.....		
(Clean convenient, and abundant.)					
Small-top milking pail.....	3	.....		
Facilities for steam.....	1	.....		
(Hot water, 0.50.)					
(In milk house, not in kitchen.)					
Milk cooler.....	1	.....		
Clean milking suits.....	1	.....		
MILK ROOM OR MILK HOUSE.					
Location: free from contaminating					
surroundings.....	1	.....		
Construction of milk room.....	2	.....		
Floor, walls, and ceiling.....	1				
Light, ventilation, screens.....	1				
Separate rooms for washing utensils					
and handling milk.....	1	.....		
Total.....	40	.....	Total.....	60	.....

NOTE 1.—If any exceptionally filthy condition is found, particularly dirty utensils, the total score may be further limited.

NOTE 2.—If the water is exposed to dangerous contamination, or there is evidence of the presence of a dangerous disease in animals or attendants, the score shall be 0.

Score Card Suggested by the Federal Bureau of Animal Industry for the Sanitary Inspection of Dairy Farms.

